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OBSERVATIONS
ON THE
DIFFERENT BREEDS OF SHEEP,
AND THE
STATE OF SHEEP FARMING,
IN THE
SOUTHERN DISTRICTS OF SCOTLAND:

BEING
THE RESULT OF A TOUR THROUGH THESE PARTS,
MADE UNDER THE DIRECTION OF
THE SOCIETY FOR IMPROVEMENT OF BRITISH WOOL.

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OF

S C O T L A N D.

SECTION I.

ON the 12th June I left Hamilton, to get my last directions from the Society's Secretary at Edinburgh, and take a view of the Society's flocks at Barnbogle, before my departure. Not finding the shepherd on the 13th, I returned to Barnbogle on the 14th; and afterwards took leave of Mr Horne, and left Edinburgh in the afternoon. On the 15th, instead of going directly to Dunse, as my route seemed to indicate, I began to perambulate Lamermoor, and stopt at Longformacus in the evening. From thence to the 20th, partly on horseback, partly on foot, I traversed this district, and the parishes of Gordon, Lauder, and Channelkirk in Lauderdale, and arriving at Dunse on the evening of the 20th, had some conversation with the dealers in wool there.

Lamermoor is a hilly district, the limits of which are not very accurately defined. Strictly, it is one of the three divisions of Berwickshire; and comprehends the parishes of Craneshaws, Longformacus, and Woolfruther; but, as the parish of Garvald, and part of many other parishes of East Lothian, lie in the same range of hills, the whole of the hilly country is frequently called Lamermoor. In this large sense, it stretches from Lamertoun, near the east sea, to Lamerlaw, on the borders of Lauderdale, 18 miles; and from Danekin, near Gifford, to within a little of Dunse, about 15 miles. This tract is composed of separate hills, divided by deep ravines, with scarce any thing

that deserves the name of a valley intervening. The summits, to the south and west, are high; Lamerlaw, the highest, being supposed to be about 1600 feet above the level of the sea. The country gradually becomes lower towards the east coast; and to the east of Cockburn the height of the hills is very moderate. Nature here appears in all the debility of old age. The herbage is frequently short and stunted, and many spots almost naked. The trees which have formerly flourished spontaneously along the hollows by the rivulets, and sometimes up the sides of the mountains, are dying away; and some attempts to raise artificial clumps have been very unsuccessful.

The inhabitants speak of it as a stormy country; and no doubt the eastern blasts will batter it pretty severely at times; but the more frequent storms of rain and snow from the south-west must be greatly broken and spent on the heights in that quarter, and the injury from deep snow lying on the ground less severe.

It appears, by looking at the gullies by which the sides of the hills are penetrated, that they are composed of columns of hard rock, standing perpendicular, or nearly so, and separated by many fissures, running in the same direction. From this structure of the minerals, it might be expected that the surface should be dry; and, when the fissures are open, and the soil thin and loose, it is so; and the springs arising on the hill sides are not numerous. The soil is various: It is generally of the colour of brick, as are also the outcrops of the stones which appear near the surface. It is for the most part thin, stony, and open, bearing feeble herbage. It is sometimes of a more dense clayey nature, and of a light gray colour: This retaining the water on the surface, has encouraged the growth of various mosses, and other watery plants, which, in rotting, have formed a surface of from 6 to 16 inches of light peat earth, seldom more, except where the growth has been increased by some spring. Where the peat earth is thick, and the declivity to take off the water little, heath, bent, and deerhair, are the chief plants; sometimes heath almost alone. Ling appears in some spongy places; on the hard dry spots, sweet herbage, consisting chiefly of the *proa*, *fox-tail*, *sheeps fescue*, *anthoxanthum*, &c.; the last mixes every where with the heath, where the soil is not very spongy. The whole face of the country is chequered with the different colours of these different plants; but the dark heath, and the blanched bent and fescue, are, at present, the most prevalent. Many of the hill sides have been formerly cultivated; and the cropping seems to have been continued till the soil has been exhausted, or washed away. The principal streams are the Whittader, the Dye, and the Watches.

This tract is principally depastured by sheep; but there is scarcely any farmer who does not cultivate part of his possession, and keep a number of neat cattle, consisting of breeding cows, and the young stock which they produce; the most of the calves being reared. The cattle are of the Northumberland kind, long small necked, fine made, and somewhat long legged. They seem to be above their pasture; and are probably less fit for such ground than the Galloway or Argyleshire cattle. The males are castrated, and kept, or sold to be fed on turnips, but never used in labour. Some cut part of the females

males also. The great object in keeping cattle, and cultivating the land, is to make a better provision for sheep, by raising turnip and hay, and improving the pastures.

The number of sheep in Lamer Moor, from the strictest inquiry I could make, do not exceed 42,000. The most part of these are of the black faced moor kind, having generally horns. Here, and in all the districts through which I afterwards passed, they are called *short sheep*; and I shall henceforth always mention them by that name. It is impossible to trace their origin, there being no tradition of the sheep here being ever of a different kind: Nor can they be called a distinct variety of the species; for a considerable difference of figure and fleece may be discovered among the individuals, even of the flocks to which the greatest attention has been paid: And it cannot well be otherwise, it having long been the custom to bring rams of different figures, from different places, to copulate with the ewes, according to the fancy of the farmer. It is believed by the most of the farmers, that these sheep can live on harder fare, and shift better for themselves in bad weather, than the finer woolled ones. As their lambs, when brought forth, have a thick rough coat, and the mothers shifty in bad weather, less loss is sustained by the death of lambs in a bad lambing time. Their greatest defects are the quality of the wool, and not being disposed to fatten at an early age, as they are less mild and sedate than the finer fleeced sheep.

Besides these, some have introduced a finer woolled sheep. These are the long hill sheep of the east border, now known under the name of the *Cheviot breed*, which will be afterwards particularly described. This has been done either by bringing in a new stock, or putting the fine woolled long rams to copulate with the short ewes: But this has not yet been long enough pursued to establish fully the comparative advantages or disadvantages of each kind; and those who are doubtful of the propriety of changing their stock, await the issue of the experiments making by their neighbours *.

This

* At Whit Sunday 1792, Mr Hay of Hopes, in East Lothian, sublet a farm to two brothers, Messrs James and Thomas Stevensons from Northumberland, who are thoroughly acquainted with the management of a breeding farm, and particularly with the Cheviot breed of sheep.

Mr Hay informs, that, when he saw this breed of sheep brought up on these farms, he entertained considerable doubt of the success of the experiment; and fortunately an opportunity soon offered, of seeing a correct comparative trial betwixt them and the black faced sheep.

Mr Hay's principal shepherd, and who had been long with him, was continued upon the farm by the Messrs Stevensons; and he kept his own flock of the black faced breed †.

In autumn 1792, when the season for laying sheep had arrived, it was found that the Cheviot breed had thrived remarkably well, and were, in general, in better order than the black faced sheep belonging to the shepherd.

2^{dly}, The ewes and the lambs that had been fed in the best pastures, although the pasture was apparently very bare, were found to be very fat; and a much greater number of them, than of the black faced ewes, had twins.

3^{dly}, Upon inquiry, Mr Hay found, that the Messrs Stevensons had a greater number of sheep and of black cattle upon this farm than ever he had kept.

4^{thly},

† The wages of every shepherd consists of so many sheep, which pasture along with the flock of his master.

This is not a fattening district. Sometimes a fallow ewe from the hill is killed, and weighs from 9 to 10 lib. avoirdupoise, per quarter; the fore quarter near a pound lighter than the hind; tallow 7 or 8 lib.; the quarters of a snow-breaker wedder, of five years old, above a pound heavier each. One farmer, by way of experiment, fed two wedders for two years in an inclosure on his own high farm. They weighed 18 lib. per quarter; tallow 18 lib.; the age $5\frac{1}{2}$ years. The mutton is esteemed excellent.

The ewes begin to lamb about the 10th April: The young, when brought forth, being well covered, are nimble and vigorous, get up almost as soon as fallen, and suck and follow the dam. The loss of lambs this spring is estimated at about a tenth of the whole. There is mostly one lamb at a birth, but sometimes twins; and this happens oftener of late, since more attention has been paid to feed regularly in straits. The lambs are mostly white; but some have black spots on different parts of the body, and one, perhaps, in 36 is black all over.

It was formerly the custom to keep a good healthy ewe to 7 or 8 years old, when they begin to fail and lose their teeth. Ewes are now commonly sold off with their fourth lamb. Since feeding with hay and turnips has been practised, some of the females take the ram the first year, and bring a lamb at a year old; but this is not approved of by judicious breeders, as it tends to make a weak diminutive stock. It is thought better to keep them from the ram till they are a year and a half old, and the smallest and weakest to two years and an half. Big ewes are sold, in the spring, from 10 s. to 12 s.; suckled ewes, at Michaelmas, from 8 s. 6 d. to 9 s. 6 d.; wedders, at $2\frac{1}{2}$ years old, for feeding on turnips, at 11 s. to 12 s.; at 3 years old, from 12 s. to 14 s.—

Eight

4^{thly}, The wool of the Cheviot breed sells from 19 s. to 20 s. per stone; and Mr Hay used to sell the wool of his black faced sheep, from 8 s. to 10 s. per stone only; and he adds, that from his granting permits, as a Justice of the Peace, for the transport of the wool of the Messrs Stevensons, he finds, that they have cut, upon the whole, a third more wool from their flock than his black faced kind ever yielded.

They generally cut from 2 s. 6 d. to 3 s. worth of wool from each sheep of their feeding flock; and their feeding wedders, give from 4 s. to 4 s. 10 d. worth of wool each.

The wool of the Cheviot breed has increased in quantity, and improved in quality upon this farm; and last year the Stevensons offered a competition with the best Northumberland wool from that breed.

The mode practised by the Messrs Stevensons, in *laying* their sheep, is, by a mixture of 8 pounds (of 22 ounces) of butter to a Scotch pint, (fully two English quarts) of tar.

The Messrs Stevensons never milk their ewes after weaning the lambs: *2^{dly}*, They never *fell* them: *3^{dly}*, They have sowed out the whole of the hill pasture; and it is no part of their plan ever to have any part of it in tillage. In short, they never suffer the sheep to be disturbed, or in the smallest degree restrained in travelling over their pasture.

Mr Hay adds, that as to the weight of the carcass, he finds very little difference betwixt those of the Cheviot breed, and of his own black faced breed.

The Messrs Stevensons have lately taken a new farm, called *Lammerlaw*; which is the highest hill in this county, and is entirely covered with heath; upon this farm they have also introduced the Cheviot breed; and, so far as their short experience goes, they say, they have reason to expect they will thrive even on that high ground. But they add more tar to the mixture for the laying of the sheep kept upon these high grounds.

Eight hog fleeces, 9 ewe fleeces, or 6 wedder fleeces, make a stone of 24. lib. avoirdupoise; though there is some difference in different grounds; hogs fed on soft grassy ground having a longer and heavier fleece than those who go on harder pasture.

Wool is generally sold by the stone of 24 lib. avoirdupoise; but some sell by the stone of 22 lib. and give $\frac{1}{8}$ more, or a pound to the stone, which makes only 10 ounces of difference in the stone. The price last year was from 9 s. to 12 s. per stone, which is more than double the price it sold for 10 years ago: But this is not attributed so much to the improvement of the fleece, as to the great rise in the market price during that period; though the high price of wool has induced several people to make some attempts towards the improvement of its quality: This is by rejecting all the ewe lambs which have a hairy open fleece, or are all over black on the face and legs, or have black or blue spots on the neck, hips, or other parts of the body; retaining only for the breeding stock such as have a white, soft, and equal fleece, and the faces and legs only sprinkled with black spots, and choosing rams of the same description.—At this time the shearing had not commenced in Lamer Moor; but the wool which I had the opportunity to see was from four to five inches long. The parcel, No. 1. will serve as a specimen. The proportion of hairy breech wool is different on different individuals of every flock; but, upon the whole, is not less than a fourth part. Hog wool is always the longest; but the weight of the fleece increases, with the size of the animal, to the second and third shearing. It gradually diminishes on nursing ewes as they advance in age.

The wool, of late, has been sold, some to the Galashiels manufacturers, but most to the dealers, who come to the country and purchase it. They are mostly employed by the staplers of Leeds and Halifax; and the wool is shipped either at Leith or Berwick. Sheep and lambs are sold at markets held in the neighbouring towns; such as Gifford, Lauder, Dunfermline, Stow, &c. A market, at Longformacus, for big ewes, in the spring, is much wished for.

All the sheep are washed before shearing; and this is done in various ways. Some have four or more people standing in a pool, and others on the brink, who hand in the sheep to them. The first takes a sheep, soaks the fleece, and plunges it into the water with the back downward, and hands it to his neighbour, who does the same, and so on to the last, from whom it goes out to some green bank on the opposite side. Others have a pool formed in some rivulet descending from the hills, and a spout so fixed, that the water falls by it into the pool. Two persons stand in the pool: The first dips a sheep in the standing water, soaking and rubbing its fleece, then gives it to the other, who holds it first with the one side, and then with the other, under the spout; and in this manner, with the help of two people on the brink, wash 40 in an hour. Others, again, make the sheep leap, from a breast of three or four feet high, into a deep pool, formed in a river or brook, through which they swim to a shelving bank on the opposite side; repeating this as often as it is thought necessary for cleaning the fleece, or as the sheep can bear without being too much exhausted, which is generally three times,

or oftener. Some, after passing them quickly twice through, give them time to drip and recover on a green bank, and again passes them twice through as before; and, when necessary, this is repeated a third time. As soon as the fleece is dry, the sheep are shorn, that they may not soil the wool by rubbing; but, when they can be kept clean, it is thought better for the wool that it should remain uncut for three or four days after. When it is shorn, and a little of the coarsest and dirtiest breech wool taken off, it is wrapt in fleeces, and laid up in a barn, with spars of wood under it, to keep it dry till it be sent off. The advantage of washing is, that, besides taking away the sand and dirt, it makes it fit for keeping for several years with safety, whereas unwashed wool is very soon damaged. Washing, in warm weather, is also reckoned healthful for the sheep, when it is executed with proper coolness and caution. Barren sheep are shorn about the 1st of July, and nursing ewes about the 15th.

It is considered, by sheep farmers, an impertinent question, to ask either what rent they pay, or what number of sheep they keep. I found it therefore necessary to be very delicate on that subject, in order to obtain the necessary information on other heads. In all the sheep countries through which I passed, it has been found expedient to diminish the number of the flocks, in order to maintain them properly throughout the year. In this district, probably, at an average, from two to three acres go to maintain each sheep; and the rent may be about 2 s. a head.

The sheep, of all ages, are salved with a mixture of tar and butter. The proportion, formerly, was two pounds of butter (22 ounces avoirdupoise to the pound) to a Scotch pint of tar; and with three pints of tar thus mixed, a score of old sheep were salved. Half a pint more was given to a score of hogs. Of late, some make the tar go farther, by giving a greater admixture of butter. Three, and even four, pounds of butter are now mixed with a pint of tar. The salving is performed about the middle of October.

This salving is thought necessary, to defend sheep from the cold and damps of winter. The tar is held an efficacious medicine for the scab, and useful to destroy the vermin which lodge upon them; and thus it prevents the fleece from being broken by scratching and rubbing, and falling off in the spring; and many are convinced that sheep could not live here without it; yet, from fair experiment, they have been found to live on pretty high ground in this district, and enjoy as good health unsalved as those that were. The wool, however, was less in quantity, and more harsh in the quality: And it is said, that if the same sheep be kept white for a course of years, the fleece fails much, both in quantity and quality. It is universally admitted, that unguents, applied to the skin of sheep, not only occasion an increase in the growth of wool, but renders it more soft and mellow, and fitter for the purposes of manufacture.

Few of the store farms keep above 1000 sheep. These are divided into three classes, under three different herds-men. The first, and most numerous class, are the breeding ewes. While these are nursing their young, all the rest of the flock are in another class, and feed on the higher, rougher, or more distant parts of the farm; the best being allotted

to the nursing ewes. The lambs are weaned about the beginning of July, and the ewes milked for seven or eight weeks. Butter, to mix the tar for salving the sheep, is made from the cream, and the milk is made into cheese. This long milking is now thought injurious to the ewes; and some are shortening the term considerably. The milking stall, or *bught*, which generally stands near the farm house, is composed of two parallel stone walls, about nine or ten feet distant, with a gate to open and shut at each end. When the weather proves rainy, the ground around the milking stall becomes so miry that the milking must be given up.

As soon as the lambs are weaned, they become the third class, and are put upon high ground, bearing heath, bent, and deerhair, where they are kept for six or eight weeks. This is here called *birning*, probably from burning, because frequently the heath has been previously burnt, that a new growth may arise. This practice is thought of great importance. Keeping them on high ground, and feeding them on rough pasture, is said to harden the constitutions of young sheep, to accustom them to put up with coarse fare, and thus to prepare them for the hardships they must afterwards encounter. But, lest this treatment, too long continued, should reduce the body, and put them in danger of dying of weakness in the spring, about the middle, or toward the end, of August, they are brought to lower and more grassy pasture, which has been saved, or very lightly eaten, from the end of June. This is called the *hog fence*; and here they are tended and fed through autumn and winter. A proper hog fence ought to consist of a variety of pasture; sweet grasses to feed them up in autumn, heath and bent for their winter support, and ling, moss-crops, drawling, &c. to furnish an early bite in the spring.

The farmers bestow as great pains as circumstances will admit in making winter provision for the sheep. They tear up such of the old pasture land as has sufficient depth of soil, or is of so easy a declivity as to admit of culture, and after reducing it by summer fallowing, and applying what dung and lime they can procure, sow it with turnips in drills. A crop or two of oats or barley follows the turnips, and the land is laid down with clover, rye grass, and rib grass, for hay.—Some reserve their stock of winter food till the flocks are in real straits: Others think it a wiser course to begin to feed betimes; and, as soon as the winter sets in, lay down a few turnips, in some dry well sheltered place, to the hogs daily, and continue as long as the turnips last. The ewes also share in the same treatment; particularly all that appear weak. In this way, they say, the flock are always in better condition; as the strength being kept up, they are the more able to struggle with hardships in the latter end of winter, or beginning of the spring. Hay is either reserved till the turnips are over, or given along with them; and it is observed, that sheep have a higher relish, and a better appetite, for the former when they have eaten of the latter. Half a Scotch stone of hay, or four cubic feet of turnips, is thought to be a moderate subsistence for a score of sheep in a day. Sometimes

times all the ewes are allowed to come down to the turnip field once a day, and take a bite of them upon the ground so long as they last.

Though this is reckoned a healthy district, the *rot* formerly prevailed, in some seasons, and on some farms, and carried off a part of the flock; but, since winter feeding has been attended to, it is scarcely known. The same may be said of that debility, and cachexial habit, occasioned by hunger, and unwholesome food, in winter, which is near a-kin to the rot. It is called the *blue sickness* in some places, and carries off a great many sheep in bad seasons.

The *sturdy*, or water in the head, is a common disease. It chiefly affects sheep of a year old, and makes its appearance in the beginning of summer. The patients have a strange distracted appearance, run about in circles, hold their heads to one side, stumble and fall down, and immediately get up and run out at a great pace. They will sometimes stand for hours hanging over some purling brook, seeming to listen with admiration to the murmuring stream. When they are driven away, they struggle obstinately to resume their situation, and not unfrequently tumble in, and perish in the water. The water in the head is contained in a bag or cyst, which gradually enlarges, encroaching upon the province of the brain, and corroding that part of the skull with which it comes in contact, till death ensues. The method of cure is to search the head of the animal to find the affected part of the skull, which yields under the pressure of the thumb, and to penetrate the part with a red hot iron, and let out the water. It is computed, that from one in 20 to one in 30, are seized with this disease, and scarcely the half of these recovered by the operation.

Other diseases sometimes occur, which not being frequent are little attended to. The most general and fatal malady is that which is here called the *Grafts ill* in hogs, in other places known by the different names of *Sickness*, *Braxy*, &c. This disease, which frequently thins the fold, seizes sheep of the first year in the month of October, and is most prevalent in inconstant weather, with frequent hoar frosts, and on the north sides of the mountains where the hoar frost lies longest. The best and strongest hogs are its most frequent victims. They are generally taken suddenly, and seldom escape with the life. They become very sick, lie, and strike out their feet. The body swells, and a spume of an offensive smell comes from the nostrils; and death soon succeeds. The disease is said to be something of the same nature with the *Iliac Passion* among the human species. An obstruction takes place, and the intestines, particularly the stomach, called the *Rodikin*, is greatly inflamed. The only palliative, which has been found, is to drive the whole to meagre pasture, as soon as the disease makes its appearance among them; but it is reckoned rather a dangerous expedient, young sheep, reduced by spare feeding at this season, being in danger of falling by weakness, before they can be restored. Some few that are seized have been relieved by making them run, when they are found still capable of exerting themselves. But the disease for the most part seems to baffle all medicinal attempts, and destroys sometimes $\frac{1}{4}$ or more of the young sheep.

Incurable,

Incurable, however, as it is generally held, I was told wonderful things of the success of one man in a neighbouring district, who recovered every patient he found with the life. Upon making particular inquiry, I was told, that what I had heard was matter of fact; that the name of this extraordinary man was Ellifon, a shepherd with Mr Murray of Crossie, in the parish of Gordon, in Lauderdale; that he performed the cures by means of some red liquid in a bottle, which he always carried about with him, but would suffer no body to see him administer it, nor would reveal the secret; but promised to leave it to his son. Thinking I could not bestow a little time better than in investigating this matter, I set out for Lauderdale. When I arrived there, I was told that the man and his son were dead; that his daughters had been carried to Kelfo, and other towns, to which he went once in the year to buy drugs; his person described to the druggists, and the articles which, according to their recollection, they used to sell to him, bought;—herbs, which his daughters thought resembled those he used to bring to the house, gathered; but, when the composition was administered, it failed of effect.

Part of the parishes of Gordon and Lauderdale are low, compared with the surrounding hills, consisting of a mixture of fine dry cultivated land, and hard moor, producing chiefly heath. On the lower grounds are a kind of long sheep, pretty large, polled, and mostly white faced. The wool was formerly of the clothing kind; but of late, by feeding with hay and turnip, and crossing with rams from the low parts of Northumberland, the fleece is become deeper. The length of the staple is about 5 inches; 6 fleeces of all ages make a stone of 24 lib. avoirdupoise, which sold last year to the Galashiels manufacturers for 17 s. Sheep of all ages are valued lightly: Three lib. butter is mixed with the pint of tar for hogs, and a pound more for old sheep. As no wedders are kept, and no more hogs than necessary to keep up the stock, the flock feeds all together. They sometimes pasture on land that has been cultivated, and laid down with artificial grass, and in winter get a few turnips and hay, and are now less fond of the wild moor. The carcase of the ewes weighs about 13 lib. *per* quarter. They are never housed, except those that have the weakest lambs, in a bad night, at the season of lambing, and little loss is suffered.

In farms which consist of a great proportion of arable land, the Dishley breed has been introduced from Messrs Culleys stock, and managed as in the lower parts of Berwickshire. Six pounds of butter is mixed with a pint of tar for salving them.

Where there is a mixture of moorish hill, and land capable of producing turnip, some buy short wedder lambs, keep them on the hill to 3 years old, and then feed them with turnips. But the greatest part of the turnips are used for feeding black cattle, as a greater quantity of manure for the improvement of poor soil is obtained that way.

Along Kelfhope water, which falls into the Leader, the hill sides are dry, and covered with sweet herbage, with a mixture of juniper. On the farm of Longhope there, a flock of long sheep were feeding. Their faces were mostly sprinkled with black spots, without horns, and their wool considerably finer than that of the ordinary short sheep.

But in the parishes of Lauder and Channelkirk there is a great deal of high coarse land, covered chiefly with heath, and very cold and strong. The snow lies long. Some years the sheep are fed with hay and unthreshed oats for 14 weeks. Short sheep alone are kept, and no attempts have been made to improve the quality of the wool; but it is thought somewhat finer than that of the sheep on the neighbouring heights of Peeblesshire. Last year it sold from 7 s. to 9 s. *per* stone, the same weight as Lamer-moor. It has of late been bought by wool-dealers in the neighbourhood, who send it mostly to the north of England. Sheep are sold at Peebles, Stow, &c. A market for shewing heavy ewes in the spring is much wished for. The division of the flock, the birning or summing of lambs, size and weight of quarters, washing of the sheep, &c. much the same as in Lamer-moor. A pint of tar, mixed with 2 lib. of butter, salves 6 hogs, 7 wedders, or 10 ewes.

It is the common opinion, that short sheep are best adapted to this high ground, and that no other would succeed so well: Yet Mr Gray, master of the inn at Nortoun, reports, that he has a sheep farm, part of which is very high and stormy. He has improved the quality of the wool by repeated crossings with fine woolled rams from Milfield in Northumberland. His wool sold last year at 16 s. *per* stone; the size of the carcase is raised from 10 to 12 lib. *per* quarter; and the sheep as hardy and as healthy as before. He salves with a mixture of 4 lib. of butter to a pint of tar, which he thinks a good proportion.

The grass-ill and sturdy are the principal diseases among the sheep, and prevail in the same degree as has been described in the account given of Lamer-moor.

The number of sheep kept in the three last mentioned parishes, according to the information given me, are about 25,000.

The greatest disadvantages to sheep farming, in Lamer-moor and Lauderdale, are the want of shelter to the sheep in stormy weather, and the want of inclosures on the land capable of cultivation, to protect such crops as the farmers cultivate for provision to the flocks in winter. To remedy the latter, some farmers are making considerable exertions at their own expence; and, in some of the new leases, the landlords have contracted to make at least two inclosures on each farm. As stones are plenty, and dexterity in walling gradually gaining ground, probably inclosures will soon become more prevalent, and will certainly be a great benefit to the country. With respect to the former, though all agree that sheep suffer much by the inclemency of the weather, and that some kind of protection from the storm might be of great service to them, provided they could at the same time enjoy a sufficient quantity of food to support them, many are afraid that it would be impossible to secure both these advantages at all times, and that sheep, after being accustomed to the benefit of shelter, would feel more reluctance to go out in the storm in quest of food, and so loiter till their strength was exhausted, which would occasion more death in the spring than if they had suffered, unprotected, the pelting of the tempest. But the great aversion in sheep to stormy weather, which is here acknow-
ledged,

hedged, pleads strongly for some attempts being made to protect them. The cruel winds which blow across the hills, are not more injurious to the sheep than to the vegetables which support them; and every storm, which drives them to the hollows, not only narrows their present range, but preys upon what ought to support them hereafter. Broad stripes of planting drawn along the sides of the hills, in different places, sweeping in curves, so as to open bays of various aspects, promise, in a great measure, to suit the different ends; and the larch and birch being the surest alpine plants, seem to be best adapted for this purpose. Were a sufficient body of these put together, the land properly drained, and a judicious attention paid to planting and fencing, there is scarcely, perhaps, a hill in Lamermoor which would not produce trees, not only to afford proper shelter for sheep, but to encourage an increased, and more lasting, growth of esculent vegetables, and also to clothe and adorn a naked country.

Dunse, being situated near the foot of the Lamermoor hills, is a great mart for sheep and wool. Mr Spence has resided there, as a felt monger and wool dealer, for upwards of 40 years, and dealt to a large extent. Mr Mabin was bred a clothier and dyer, and, by the assistance of Mr Hay of Drummelzier, now manufactures on his own account. He employs about 30 people, and makes very handsome narrow cloths; but labours under great disadvantage, in not having command of water to work his machinery. The opinion of these experienced people, respecting sheep and wool, is, that short sheep, as being hardier, are fittest for high stormy pastures; and, if proper care be taken to choose only those of the finest closest fleece for a stock, will be the most profitable on such ground; that the wool, of late, since storemasters began to cross with fine woolled rams, is improved; that a light dry soil, producing short sweet grass, and a moderate climate, where sheep are not exposed to extreme cold and storm, is most favourable for fine carding wool; that sheep, when reduced by hunger and cold, have not only a lighter fleece, but the wool, though fine, is weak and dry, and less valuable to the manufacturer; that high feeding, by lengthening the staple, increases the quantity of wool, but makes it coarser; that small sheep, white, or slightly sprinkled, on the face, bear the best carding wool, which ought not to exceed two inches in length. Salving they hold necessary for preserving the quality of wool in all cold high pastures; when that is omitted, the wool is of a harsh unkindly quality; but too great a quantity of tar was, and still is, used by some, which tends to consume the wool. A greater admixture of butter, which many now use, has made great improvement, both in the real quantity and in the quality. Oil, in place of butter, they condemn; and of tallow they have no experience.

Mr Mabin buys the best Scotch wool, and separates it into three sorts; besides the breech wool, which may be about one fifth of the whole, and this he sells to Leeds, &c. The rest he manufactures into cloth of different qualities.

Dunse is thought to be a good station for a wool comber, as much combing wool, of an excellent quality, grows in the lower parts of Berwickshire.

SECTION II.

ON the 21st and 22d, I made some circuits through the low part of Berwickshire, and waited on Mr Swinton of Kimmergham. On the 23d I went to Greenlaw, where I heard that neither Mr Low, nor Mr Dickson of Antoine's Hill, were at home, and therefore rode to Kelso in the evening. Mr Swinton has different kinds of sheep, and is making various experiments, to which he orders his overseer to pay accurate attention. His pasture lies warm, is rich, sweet, and well sheltered, being a lawn around the house, on which many fine trees stand scattered. His flock consists of some Cheviot sheep, some long woolled from Northumberland, and some of a very coarse fleece, said to have been brought from Spain, besides a fine woolled Spanish ram, an ewe and lamb, and a Ryeland ewe and lamb. He causes specimens of the fleeces, from different parts of the body, to be kept, to compare that of one year with another; and proposes to transmit these to the Society.

The fleece of the Ryeland ewe, cutting 1793, is a little deeper and coarser than 1792.

The Spanish ram has been much reduced, but now recovering: His fleece is also weightier, and rather coarser.

The first Spanish ewe died of the foot-rot; and her lamb, which had the same disease at its birth, died of it also. Mr Swinton has got a new one, of a very fine fleece, which fold this year at 3 s. 6 d. per lib. avoirdupoise. She and her lamb seem to be in good health and spirits.

The effects of crossing, between the Spanish ram and the ewes of the other kinds, is remarkable. The wool of that with the Cheviot ewes is nearly equal to the Ryeland fleece, and fold at 2 s. per lib. The fleece of a Spanish ewe, with long, coarse, and hairy wool, fold at 6 d. a pound; the fleece of her lamb, got by the fine woolled Spanish ram, is two inches long, and fold at 2 s. a pound. The wool of the cross with the Northumberland ewes is become shorter and finer, in the same manner. It ought here to be observed, that all the above were shorn, in lambs, 20th August last year; and the wool in question is that which grew from that time to the middle of June.

The middle part of Berwickshire, lying to the south-east of Lamermoor, is low and plain, and is now, for the most part, a highly cultivated district. The soil is generally light, dry, and friable, partaking of a sandy or gravelly nature. Near the banks of the Tweed is some soil of a more tenacious nature, approaching to clay. Under both there seems to be an open dry under stratum. The whole is of a reddish brick colour. This red earth seems to be possessed of an uncommon degree of latent fertility, which exerts itself when ever it is properly excited; and the inhabitants are not wanting in industry to call it forth. The land is almost every where inclosed with stone walls or thorn hedges; and many of the hedges are in excellent order. The fields in tillage are well
drest,

dress, perfectly freed of weeds, and bearing fine crops. Those in pasture have a close turf, stored with good grasses, and yielding abundance of rich pasturage. Besides the natural source of fertility above alluded to, there are other circumstances, of which the people have availed themselves, to bring the land to this condition. In some few places, in the bottom of marshes, a vein of rich shell marl is found, which has been used with great success. All along the Whittader, a band of petrified clay marl appears in the face of the banks, and may be found by digging in the neighbouring fields. This, when laid on the land in large quantities, has very considerable, and lasting, effects in producing both corn and grass: But, as its operation is slow, and the digging and cartage laborious, many now prefer lime, which they bring from Northumberland to the south side of the country, and from East Lothian to the north. Indeed, there is great inducement to use lime here; for its efficacy is remarkable; turnips being raised by it without any other manure. Manure is never applied but on fallowed land. If a field is thought so poor as not to be fit to yield a crop without it, the old turf is plowed up, and the soil reduced by repeated plowings and harrowings, lime, or other manure, is then laid on, the land neatly ridged up, and turnip seed drilled in on the top of each ridge, mostly at about 2½ feet distant between the drills. The turnips, which are sown from the middle of June to the middle of July, are repeatedly cleaned with the hand and horse hoe, and any weeds that may have escaped the frequent plowings and harrowings effectually destroyed. The number of cattle fed by these turnips furnished the farmer with a new stock of manure, and enabled him to make additional ameliorations on the land. It is thus the improvements commenced, by which the fields of the Merse are brought to so high a state of cultivation; and great, indeed, the improvement must appear to any one who compares the luxuriant crops on the cultivated land with the sterile appearance of the spots which still remain untouched.

The late increased demand for butcher meat, and the high price to which it arose, gave an additional spur to the turnip husbandry; and many put a considerable part of their possession into a perpetual rotation of turnip and corn crops alternately. Some even had one turnip crop immediately succeeding another. But this perpetual stirring and opening the ground, and the quick succession of the same kind of plants upon it, was found to exhaust it too much; and, besides, the great expence of the number of labouring people and horses, necessary to conduct this operose system of husbandry, inflamed by the late rise on the wages of labour, induced husbandmen to turn more of the land to grass, and suffer part of it to remain so, while it continues to produce good pasture.

With the increase of improved pasture, the practice of pasturing sheep has increased. Formerly, some lowland long woolled sheep were kept in this district, bearing, it is said, combing wool of an exceeding good quality. They are now mixed with, and almost lost, in the Dishley breed, which has quickly gained footing in the Merse. Messrs Culley and Mr Daufon, upon the side of the Tweed, have been long known as eminent breed-

ers of this kind of sheep. The same line is now followed in the central parts of Berwickshire; and Messrs Logan of Edrom have taken the lead in it. They began by crossing their ewes with Dishley rams, hired at 100 l. and upwards for the season, and have now brought their flock to a considerable degree of perfection. The principal breeders observe great nicety in their choice, and reject a ram that an ordinary observer would think unexceptionable; but it is the make and figure of the animal, rather than the wool, which is the principal object of attention. Some of the first breeders now hire out rams from 10 l. to 50 l. for the season. They are really handsome sheep, and make a pleasant appearance on the fine green pasture where they feed.—But the original stock having been so fully described by Mr Marshall, in his *Observations on the Midland Counties*, it is unnecessary to attempt it here.

They are generally carried on from birth to slaughter by the same owner. Ewes get the ram, at a year and a half old, about the first or second week of October. A few turnips are given to the breeding ewes, in time of snow, in winter; and daily, for a month before lambing, they are moderately fed, so as not to make them too fat, which is dangerous in that state. A cart load serves 50 or 60 a day. After lambing, they get as many turnips as they can eat, while turnips last.

Two ewes, deducting all incidental losses, produce three lambs at weaning time. Being much disposed to become fat, they are but indifferent milkers, and seldom make good fat lamb. The lambs are weaned about the middle of June, and put to run on short pasture for six or eight weeks. They are afterwards brought to rich grass; and as soon as it fails fed with turnip, either folded on the turnip ground, if dry, or turnip carried to a dry firm pasture; and this is best for the sheep, which delight in a dry clean bed. Henceforth they are always kept in high condition; it being an unerring rule never to allow an animal, which is going to be fed, to lose any flesh; for which reason, the sheep which are to be soonest sold are always preferred to the best feeding.

An English acre of pasture is allowed to two sheep; but where the pasture is very rich, it feeds four for seven months. About the middle of November, when the grass fails, they are begun to be fed on turnips; and, daily, as many as they can eat, so long as the turnips stand, are given to them. Full feeding costs from 3 d. to 4 d. per week, each sheep, or about 6 s. for five months. Some dunmouts are sold for slaughter, from 16 to 20 months old, in the months of July or August, after they are shorn of their first fleece, at from 24 s. to 22 s.; but the greatest part are kept, and fed as above described, till after the second fleece is shorn. They then weigh from 24 to 34 lib. avoirdupoise, per quarter, the fore quarters rather heaviest, and are sold from 35 s. to 45 s. each, shorn sheep. Ewes are sold after having nursed the third year's lambs, as they fall off both in carcase and fleece after they are four years old. They weigh from 20 to 26 lib. per quarter, and are sold in September for 23 s. or upwards.

As soon in the month of May as the weather becomes mild, the barren sheep are hand washed in a pool of some river or running stream. The nursing ewes, which are

not in such high condition, are washed about a fortnight or more thereafter. When the wool is thoroughly dry, they are clofe thorn in a very neat manner. The sheers used are neater, and of a smaller size than the common ones. The operator cuts with the points directed towards the unthorn wool, and takes off the fleece so neatly, that scarcely a mark of the sheers is to be seen. This kind of shearing is called *Culleying*, from the name of the gentleman who introduced it. Masterly as it appears to be, it is not approved of by the storemasters of the hill country. They say, that, by the appointment of nature, when the winter is over, the fleece, which has defended the sheep from the cold, begins to lose its hold, and a new growth succeeds; that any part of the new wool, clipt along with the old, goes away in the washing, and is lost to the manufacturer; while too close shearing exposes the animal to the alternate injuries of the scorching sun and cold rain. These objections, however, do not lie so fully against shearing the high fed sheep in question in this manner, as the same distinct separation, between the old wool and the new, does not take place in their fleeces, and they are generally better sheltered.

The wool is all of the combing kind; the length of the staple from 8 to 12 inches. The hogs, the dunmots, and the ewes fleeces, are each kept separate, and laid up in a wool loft. The fleeces of the hogs are heaviest, the ewes the lightest. Seven fleeces, at an average, make two stones. It is sold by the stone of 24 lib. avoirdupoise, at from 16s. to 18s. per stone. No. 2. will serve as a specimen. Some goes to Aberdeen, Banff, Edinburgh, and Stirling; but the most part is sold to dealers from Leeds, and other manufacturing towns of Yorkshire. The sheep are generally purchased by Jobbers, who drive them to Morpeth market, and sold for the consumption of Newcastle, Shields, Sunderland, the collieries, and shipping. Some also go to Yorkshire, and farther south.

There are few diseases mentioned to which these sheep are incident. The sturdy seizes some hogs; but, as they are always fat, their throat is cut as soon as it is observed; and this is the only cure attempted. Much doubt is entertained here about the utility of salving. Some never apply it, and find no inconveniency: Some salve hogs with oil, mixed with as much butter as to fatten it: Some prefer tar, and mix 3 lib. of butter with a pint, and salve the hogs only.

SECTION III.

AFTER leaving the lower parts of Berwickshire, and going, by Greenlaw, to Kelfo, as already mentioned, I left Kelfo on the 24th, and going through the parishes of Maccarston, Smallholm, and Merton, waited on the Earl of Buchan at Dryburgh Abbey. From thence, by Melrose, to Galashiels on the 25th, where I stopt to visit the works, and have some conversation with the manufacturers. I afterwards waited on Mr Pringle of Whitebank, called at some of the neighbouring farms, and stopt at Selkirk in the evening.

evening. Neither Sir Gilbert Elliot nor Mr Pringle being at home, I proposed to penetrate into the central parts of the country, by the course of the Etterick and the Yarrow; but being disappointed of a guide, and hearing there was to be a fair at Yetholm on the 27th, at which many of the storemasters attended, I went from Selkirk to Hawick on the 26th, and thence to Yetholm on the 27th, to meet with the people on whom I had been directed to call for information. None of the gentlemen whom I saw at the fair being at leisure to attend me the day following, I went to Kelso in the evening.

Approaching Greenlaw from the east, we leave the fine cultivated land behind us; and an arid moorish soil succeeds, producing principally short heath, fine bent (*agrostis feliformis*), sheeps fescue (*festuca ovina*), and some sweet short grasses. A few corn fields intervene; but most of the land is occupied in pasturing sheep. Here it may be observed, in passing, that the large thriving plantations of the Earl of Marchmont, over the summit of a hill, show what may be done to raise shelter on pretty high ground. From Greenlaw, to the banks of the Eden, near Kelso, the same poor moorish land; some hollows moist, and rushes (*juncus conglomeratus*), abounding. The environs of Kelso are rich. All the land is handsomely inclosed, and adorned with planting. Every field is cultivated like a garden; and the crops promise a proper reward for the care bestowed on them. Here, if any where, agriculture has arrived at perfection; and it is perhaps the most beautiful and highly cultivated spot in Britain. Through the parishes of Maccarlston, Smallholm, and Merton, is a mixture of plain and hilly ground; the soil mostly dry and sandy; partly cultivated, partly pasture; the hills mostly clothed with sweet herbage, with scattered bushes of furze. The Earl of Buchan has a fine airy pasture hill, inclosed with a stone wall, a dry soil upon a rocky bottom, covered with close sweet herbage. The valley affords a snug retirement in the storms of winter. His Lordship has got some small Ryeland ewes, and some young ewes from Cheviot. These are crossed with a little Spanish ram with curled horns. It is a very healthy animal, quite sound in the feet, and seems to be better shaped in the hind parts than most of the sheep from the same country, rather low shouldered. But it was so shy I could not get near it to examine it accurately. The lambs have very close well topped fleeces, and fine. Their make is not exceptionable, were it not for the lowness of the shoulder.

The Yilden hills are dry and rocky, covered with fine herbage. The fields around Melrose, and all along the side of the Tweed, are cultivated. The hills, which now begin to approach nearer to the side of the river, are hard and rocky; some covered with a pleasant verdure, and others with short heath and bent, and some verdure intermixed. Galashiels is a rising village. Every one is engaged in some department of the woollen manufacture; and a spirit of industry, which must give pleasure to every wellwisher of the country, pervades the whole. It is needless to attempt here any account of the manufactures of Galashiels, as a very accurate detail has been given, in the Statistical Account of the parish, by the Rev. Mr Douglas, the minister, a very intelligent gentleman, and a zealous promoter of the important manufactures in which his parishioners

are employed. It will be proper, however, to add, that, since that account was written, the Hall for the sale of cloth, in imitation of that of Leeds, has been built by subscription *; and great progress made in the application of machinery for executing the different offices, and facilitating the labours of manufacture. The sole material is wool, of the growth of the neighbouring country. It is bought immediately from the farmers, and sorted by the manufacturers. The finest, which is from 18 s. to 22 s. per stone, is divided into five sorts; two finer on the fore parts of the body, two coarser farther back, and the breech wool makes the fifth. The second wool, from 12 s. to 15 s. is divided into four sorts; that on the neck and shoulders making the first; the wool of the body is divided into two parts; and the breech makes the fourth. The coarsest wool used here is bought about 7 s. per stone, and divided into two sorts. The tar is discharged from the wool by means of a composition, proportioned according to the grossness of the taring. The breech wool is mostly sold to the north of England, for carpets, and other coarse uses, at 5 s. or 6 s. per stone. The sorted wool is teased (dishevelled), scribbled, and carded, by different machines driven by water; and the same wheel which gives motion to the fulling mills moves the whole. As much work is usually done by a set of these machines, in preparing the wool, in a day, as formerly cost a guinea when done by the hand. The slabbing, or roving, and the spinning, are performed on engines, having each between 30 and 40 spindles, wrought by the hand of one person; and the manufacturers say it is impossible to spin proper yarn for cloth upon water machinery. The fly shuttle to the loom has also been lately introduced, by which a great deal more work can be performed. Thus hand labour is greatly shortened, and all the different operations cheaper and better done; yet, from the extension of the manufacture, no person is thrown idle. If the manufacturers of Galashiels have not succeeded, it may at least be said they deserve it. From long experience, they have acquired great skill in wool, and the manner of managing it in all the stages of manufacture. Their application is unremitting. They frequently consult with one another about what improvements may be made; and, of late, the young men are sent to work for some time at Leeds, Huddersfield, or Halifax, to make them masters of their business, and learn any new discovery that may have been made. More houses for water machinery are now building, and more slabbing and spinning engines erecting; and those industrious people want nothing but capital to carry the woollen manufacture to a very respectable height. They now dread the consequence of the unhappy shock which the commerce of the country has suffered; and it is much to be feared, that, in their situation, it will fall heavy upon them. What a pity it is they should be overwhelmed! Every prudent step should be taken by patriotic societies, or individuals, to prevent it; for, should this valuable manufacture be crushed while it is still in its infancy, perhaps it may not be soon, nor easily restored. Three hundred and thirty-five packs of wool

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are

* The Hall is opened, for the sale of cloth, first Monday of every month.

are consumed here annually. The manufacturers think, that, if the regulations which take place among the Yorkshire manufacturers were also established by some kind of authority among them, they would be of service.

The opinion of the Galashiels manufacturers, and others in this neighbourhood, relating to wool, is as follows; that great improvement has been made in its quality, in the neighbouring country, of late, by the attention paid to crossing, and choosing the finest woolled rams; that the wool of some farms is finer than that of others, by 2 s. or 3 s. per stone, even when the stock, and attention to improvement, is equal; that the wool of the same stock, and the same farm, differs in different seasons; that long grass and full feeding tend to make wool longer and coarser; that wool is finest when the sheep are sparingly fed on short sweet grass, and land tolerably dry; that salving is necessary for preserving the quality of wool, if the pasture is wet, or high, and exposed to the storm; and they prefer felled wool to white, or unfelled, except for light colours, or the white of mixtures, if a proper quantity of butter be mixed with the tar; and they think four pounds of butter, to one pint of tar, is the best composition. They add, that the salving of one year has a good effect on the fleece the year following, though the salving has been discontinued; for which reason they think it would be proper to fald sheep every second year, on pastures where it is not absolutely necessary to fald every year. Salving prevents the growth of kemp (dead hairs), which is apt to prevail among the wool of sheep feeding on hard dry pastures. The finest wool used at Galashiels comes from the neighbourhood of Jedburgh.

The pastures near the foot of Galawater are mostly green, with heath and bent on the tops of the hills. Near the foot of the hills, the ground is frequently wet, and covered with spret (*juncus articulatus*). Between the Tweed and Selkirk mixed pasture, mostly of a good quality. From Selkirk to Aile water, the hills are moderate, and the slopes gentle; a dry soil upon whin rock; the pasture mostly green, intermixed with spots of heath. Much land, which has been formerly in tillage, seems now to have lain long in pasture; and it is remarkable, that the *festuca ovina*, which has been much celebrated as a favourite food of sheep, is rising in great tufts on these old pastures, and left untouched, while the other grasses around are eaten down. The height between the Aile and the Tiviot is a cold wet clay soil, mostly cultivated, but yielding poor crops. Upon the banks of the Tiviot are fine dry cultivated fields.

Through all this tract, the long hill sheep of Tiviotdale (which will be particularly described in the next section) are pastured. In the lower parts, this kind has been kept from time immemorial; but, of late, almost every one has been attempting to improve them, in shape and fleece, by crossing with rams brought from the banks of Rule, Kale, or Beaumont waters. On the higher grounds, such as the pastures along Gala water, and other places on the borders of Selkirkshire, they have been only introduced since the rise of the price of wool. They now prevail up the Gala to very near its source; up the Ettrick to the lower boundary of Ettrick parish; and up the Yarrow to Yarrow church.

church. About the heads of these streams, the ground being high, the soil wet and soft, and the climate cold and stormy, the short sheep, which are deemed the most hardy, are still retained. Where the long stock has been introduced, the change has been generally brought about by buying a few ewe lambs of the long kind at Hawick markets, and afterwards continuing to bring rams for the whole flock from the east border: But others have contented themselves with the slower method, of crossing, from time to time, the short coarse woolled ewes with fine woolled long rams. It would be endless to recapitulate the minutiae of every farmer's practice for this purpose; but I shall give the process followed by one very acute farmer near the foot of Gala water, which may serve as a specimen. When he entered upon the farm, the stock was of the long kind, polled, and white faced; their shape was gibletty, having long slender necks and legs, and the shoulders thin and low; the wool indifferent. His first aim was to improve the carcase, by procuring stout handsome well shouldered short rams to cross with the ewes of his own flock; taking care that the fleece of these rams was as good, and as free of black spots, as possible, and rejecting such of their lambs as were spotted and hairy. He afterwards crossed the progeny with fine woolled long rams, from the heads of Rule and Kale waters, and has since enlarged the size of his sheep, by crossing the ewes with larger rams of the same kind, brought from places nearer the foot of these streams. He now considers his flock as superior to others around him, both in shape and fleece, or, as he calls them, the best bred sheep in the neighbourhood. He thinks fine woolled sheep are as hardy as the coarse woolled; that the same pasture maintains as many of the former as of the latter; and that the former, being more quiet, feed better and fatter. He gives his sheep a little hay in winter, whenever they will take it. His ewes give plenty of milk, and nurse the lambs well; and the lambs, though their clothing is short, when the two first days after the birth is over, stand the cold as well as those which are more roughly covered. The length of the wool on his flock is about three inches, and sold last year at 18 s. per stone. He salves all his flock with a composition of 4 lib. of butter to the pint of tar, and thinks this much better for the wool, and as good to defend the sheep on any ground, as a greater admixture of tar. It is the general opinion of farmers, that it is of importance to bring rams from other flocks, and never to breed in kin, for improving and preserving the figure, the fleece, and the health of the flock.

The figure and size of the sheep are different, in different places of this tract. Some with longish legs and thin shoulders; others square made and well proportioned; owing, no doubt, to the different degrees of attention paid to the breeding. A little to the south of Selkirk, there was a flock composed of long and short sheep; and it was observable, that the long sheep were in best order, their fleeces neat and entire, while those of the others were much broken. A ewe's carcase weighs from 10 to 12 lib. per quarter. Some keep only breeding ewes; but those who rear wedders sell them commonly, in hogs or dunmonts, from 9s. to 13s. each; draught ewes, of five or six years old,

old, are fold, at Michaelmas, from 8 s. to 10 s. The price of wool, last year, was from 15 s. to 18 s. 6 d. per stone, of 24 lib. avoirdupoise. Six hogs, and eight ewes fleeces, make a stone of salved wool. The length of the staple is from $2\frac{1}{2}$ to $3\frac{1}{2}$ inches.

In the lower lands, where the ewes are well fed, it is not uncommon for them to bring forth twins, but one lamb is most frequent. One of the Earl of Buchan's small Ryeland Ewes brought forth, and nursed, three lambs this summer, but was well fed in the spring with oats and hay. There are a number of markets for sheep, lambs, and wool, in this country, held at Kelfo, Melrose, Galashiels, Selkirk, and St. Boswell's Green.

All the sheep are washed before shearing, either by passing through the pool, or hand washing. Barren sheep are shorn about the latter end of June, and the nursing ewes a fortnight later: But the time varies somewhat according to the state of the weather. The lambs are generally weaned before the mothers are washed.

This tract is very various, and some places more healthy than others. The sickness, or grass-ill, in hogs, proves very fatal in some farms, and in others is little felt. Many impute this disease to the spare pasture allowed to new weaned lambs on the summering grounds, and the full feeding afterwards, when they are brought to the saved grass on the hog fence. For this reason, the practice of long summering, and saving ground for a hog fence, is much given up. The weaned lambs are kept with the barren sheep for a fortnight, and then the whole flock is allowed to mingle, and pasture over the whole farm; and it is said there is now less death. The sturdy is known, but not complained of as the cause of great loss. The leaping-ill, a disease which has been very fatal through all the western parts of Roxburghshire, has occasioned great loss in some parts hereabout; but it is now less frequent. This dreadful disorder will be more particularly described in the next section. The land is mostly dry; and there are few instances of the rot; nor is the scab greatly complained of.

The flocks are not numerous: Those I met with were mostly from 300 to 500, and some smaller. On the distant hills, I understood they were larger. The pastures are not inclosed. Those who possess arable land fold their sheep, during the night, in inclosures made with walls of fods, pretty large, with division walls, either for shifting the whole flock, or separating it. In one corner of the inclosure is a small one, in which the ewes are milked for six weeks, or more. The space, thus enriched by the droppings of the sheep, is ploughed up, and cropped with oats, the year following, and afterwards with turnips, for the maintenance of the flock. Where turnips are given to sheep, the feeding is begun soon after Martinmas, and the full of a boxed cart given a day to three score, so long as the turnips last. Some have a little hay provided, which is given in straits. No particular attention is paid to the young lambs; and a great death happened among them this last spring, which was attributed chiefly to the weakness of the ewes. There is no division of the flock, but that of keeping the breeding ewes and the barren sheep separate, while the former are giving suck.

I found most of the sheep falved; and all those who practised falving seemed to be certain of the benefit arising from it. They said, that it prevented the great increase of cades (sheep bugs), which are most numerous on young sheep; that it improved the quality of wool, and prevented it from falling off in the spring; and that sheep thrive the better for being falved. The proportions in the composition are different. Some mix three pounds of butter with one pint of tar, and this falves 10 hogs. For older sheep, they put four pounds to the pint. Some give no more than $2\frac{1}{2}$ pounds of butter to the pint of tar for the whole flock; others, besides the butter, add a pint of oil for 12 pints of tar. The wetter the soil, it is judged necessary to falve more grossly. On the pastures near the Tweed, an acre is allowed to feed a sheep; on those that are more distant, and the land higher, much more is required.

SECTION IV.

FROM Kelfo, I went down the Tweed, and, crossing it by the bridge at Coldstream, went along the plain country, through Milfield to Wooller. From thence, June 29. turning to the north-west, I began to traverse the hilly district, so famous for its fine woolled sheep; and from this time to the 5th July, I crossed the country, calling at different farms on both sides of the border, and attending at the different operations of the season.

The flat country of Northumberland is cultivated in the same neat manner as the Merse, and the environs of Kelfo. The stiffest soils are pulverised by dint of labour, and prepared for turnip. On the light dry soil, turnips are eaten upon the ground by sheep, and wheat is sown in the month of February, producing excellent crops. This management is found to be preferable to a clean fallow, on such land. A tolerable crop of turnips is reckoned worth 5 l. per acre. The droppings from the sheep enriches the land; their treading consolidates it, prevents the injury of the drought, and affords a firm hold to the roots of the corn; and the corn spurrey (*Spergula arvensis*), a very hurtful weed, is destroyed. For all these reasons, a surer and better crop of clover, or other artificial grasses, is obtained.

On most of the improved pastures sheep are fed, generally of the Dishley kind, but some also of a larger bone. These last are said to have been long in the country, and are probably of the same origin with the Tees water sheep. The management is the same as in the low lands of Berwickshire, already described. On the low dry downs of Milfield, a gravelly soil, covered with a mixture of heath, fine bent, and sweet herbage, breeding sheep, bearing fine carding wool, are kept.

The hilly district, which I am now to describe, is very extensive. A waving line, running from the north side of Ruberflaw (a hill so called,) and crossing the Jed and the Rule, and so proceeding to near Yetholm, bounds it on the north; from whence

it extends fouthward to the foot of the hills in Northumberland, where the land becomes capable of cultivation. Ruberslaw, the head of the Jed, and Carter Felt, mark its western boundary; and it extends eastward to near Wooller, and the banks of the Till. This extensive tract is very thinly peopled. Excepting the inhabitants of the villages of Yetholm, Kirk Newton, and a few inconsiderable hamlets, farmers or store-masters, possessing each from 2000 to 7000 sheep, with their necessary herds-men, labourers, and domestics, make the whole of its population. The bottom, almost every where, is rock, approaching generally very near the surface. This is either of a hard, slate coloured stone, standing in perpendicular columns at a little distance from one another, and the interstices filled with fragments, of the same colour, in a more decayed and shivery state, or a brick coloured stone lying irregularly, and separated by many fissures, which, either from its original construction, or senile state, shows a tendency to decompose, with the air, and is generally crumbled into small fragments near the surface. Both are known by the common name of *whin*; the one called the *blue*, the other the *brown*, or *red rotten whin*. The soil, wherever there is soil not injured by rising springs or stagnant water, is sweet and fertile; but the surface is too bold to submit to the plough, and many of the summits too much exposed for the production of corn; the whole being almost continued clusters of hills standing close by one another; in the midst of which Cheviot raises his broad black head far above the rest. Other summits are pretty high; such as Hownam-law, Brown-dean-laws, Carter-fell, &c. The whole country is naked and open, except a very few small inclosures, or paddocks, surrounded with stone walls, at some of the farm houses. Scarce any of the few clumps of fir, which have been planted for shelter to the sheep, are in a thriving state. The whole is now an unbroken continuation of sheep pastures, except such cultivation as is made for the accommodation of the flock. In such an extensive tract, where the efforts of nature are neither controlled nor directed by the hand of man, the surface productions, as may be expected, are very various. The hills from Wooller to Kirk Newton are rocky, and pretty steep, but covered with a close sweet verdure to the summits, with scattered ferns growing among the stones on the hill sides. The banks of College water are short sweet pasture, with some mixture of heath. The most beautiful smooth low verdant hills lie between Newton and Paston, on all sides. To the south of Yetholm are many clusters of fine smooth knolls, covered with the sweetest verdure. In this neighbourhood, many of the hills bear the marks of having been cultivated to the summit; and some of those which have lain long neglected are now breaking up for turnip, &c. All the pastures along Beaumont and Kale waters, near the foot, and for more than 15 miles up these rivers, are close and fine. Spots of heath and bent sometimes occur on the hill sides; but this is admitted to be an advantage. All the pastures, however, are not of this fine quality. On the north side, where the country is less hilly, there are many plain spots, which having lain long neglected, the surface water has preyed upon the soil, destroyed the sweet verdure, and brought a growth of

mosses (*musci*) in its place. These accumulating, have formed a thin coat of peat earth, over the original soil, producing, in some places, heath (*erica*), deer hair (*scirpus cespitosus et pauciflorus*), and fine bent (*agrostis filiformis*), in others chiefly stool bent (*juncus squarrosus*). Where the stagnant water is increased by rising springs, the *viola palustris*, the *carex panicia*, and such marshy plants, appear among the other herbage. Upon the south-west of Cheviot, the plain top of the Ridge is covered with a coat of peat earth, in some places very coarse and miry, producing all the kinds of moorish herbage above enumerated. Among these places, however, there are dry slopes on the sides of the hills and hanging banks of the brooks, such as Cocquet water and other streams, where the red shivery rock appears, producing fine pasture. Towards the heads of all the rivers and streams, the pastures become coarse. The head of Red water, and of the Tine, are very spongy. I intended to go down the latter, to get a fuller view of the country, but was told it would not be practicable to travel that way, with a horse unaccustomed to such roads. North-west from Cheviot, in the parishes of Jedburgh and South Dean, is a great range of good pasture of a mixed nature. The hills are composed of the red shivery rock; and the upper parts are covered with a thin but fertile soil, bearing a close turf of sweet herbage, interspersed with tufts of the *festuca ovina* to the summit. Some spots occur, having a thin surface of dry peat earth, producing short heath, the different kinds of bent, (*agrostis canina, pumila, et filiformis*), mixed with other gramina. Towards the bottoms of the hills, the sloping sides are of a clayey nature, formed probably of melted fragments of rock washed down. These, moistened by the water descending from the tops of the hills, or exuding in small springs from their sides, are always very damp, and over-run with spret (*juncus articulatus*). Frequently spaces intervene, between the hills, of flattish ground covered with a stratum of soft peat earth, from 6 to 18 inches deep. On these, heath and rank mosses grow, interspersed with *erichorum palustre et vaginatum*. The young seed stems of both these plants, which rise early in the spring, are called *moss*, or *moss crops*; and the long narrow leaves of the latter *draw-ling*. These plants contribute greatly to the support of sheep. On all the moist places, *nardus stricta, schoenus nigricans et albus*, and some of the larger species of *carex*, abound, and seem to be comprehended under the general name of *ling*. Considerable pains have been bestowed, of late, to correct the excessive humidity of all the wet parts of the pastures, by drawing open drains through them, about 18 inches wide, and 14 or 15 inches deep, slanting across the declivity, in the hanging ground, and generally terminating at the source of some spring. Great benefit is said to be derived from this practice, by sweetening the pasture, and allowing the sheep to lie comfortably, when they choose to take their abode in such places.

This, like every other hilly country, must feel the storm pretty severely at times; yet the rains, snows, and winds, are certainly less violent than in some higher and more westerly parts. That this is the case, seems to be confirmed by a vulgar saying, commonly used here. As it is more generally said, ‘A Scotch mist will wet an English-

‘man to the skin,’ alluding to the greater humidity in the northern part of the island, so it is said here, ‘That a Liddisdale mist will wet a Tiviotdale man to the skin.’ The ridge along which the division of the two ancient kingdoms runs is very high, and there the snow lies long; and, indeed, most of the other great summits are too much elevated for sheep to live in, in stormy weather. But, many of the hills standing detached, furnish numerous hollows of different exposures, in some of which shelter must be found against every direction of the wind; and, however high some of the mountain tops may be, many of the hollows must be low ground; for the brooks, wherever I observed them, do not descend by cataracts, or rapid currents, but in gentle purlings, to the sea.

The sheep fed here were formerly called *the long hill sheep of the east border*; but are now better known by the name of *the Cheviot sheep*. They are all polled and smooth faced; their fleeces are unmixed white; the legs and faces either white, or somewhat mixed with black or brown; and this mixture on the face is always of a darker shade towards the nose. Those with the black mixture on the face are said, by some, to bear the finest wool. Their heads and ears are finely shaped; their countenances mild and pleasant. The whole figure is generally regular and well proportioned; but there are individuals in some flocks rather thin shouldered, with legs too long for the size. The body, but more especially the tail, is longer than that of the sheep described in Sect. I.; and hence, probably, has arisen the distinction of short and long sheep. The fleece is generally close, even, and full topped; and the wool soft and fine, of from 2 to 3½ inches length of staple. The same kind of polled sheep have fed in this district for time immemorial; nor does any body alledge that they were ever the natives of any other region. The fine green hills around the feet of the streams by which the country is watered, may be called *the northern Arcadia*. In these mild retreats, where a knoll arises to afford shelter against every blast;—where a long-during verdure yields a moderate sustenance, but never a gluttonous feast;—where a warm dry bottom gives always an agreeable bed;—this race seems to have been first reared, and afterwards spread over a larger district. However, they have of late been greatly improved. Formerly, they are said to have been lank and gibletty; the back lax, the legs and neck long and slender, and the shoulders thin; the fleece, though fine, open topped, and the breach hairy; the lambs weak, and thinly covered. About 30 years ago, Mr Robson, a farmer of great professional knowledge and attention, is said to have been the first who attempted to amend these defects. He brought rams from the Wolds of Lincolnshire to copulate with his ewes, by which the carcase and figure was much reformed; and, by repeated crossings, has obtained a highly improved stock. Some, however, alledge that he has carried the matter too far, and has made his sheep too soft for the climate. However this may be, he is not now single in the endeavour to reform. Every farmer has been labouring, according to his judgment, with less or more assiduity, to improve the flocks, both in figure and fleece; and in the hands of those very well informed, accurate, and intelligent men, the art of sheep pasturing has made greater progress, in the course of

the last 30 years, than it had done, perhaps, for many centuries before. The general practice has been, 1st, To choose a ram, from any neighbouring flock, of the most approved shape, and soft, close, and equal fleece, which is put to copulate with a few select ewes of the flock. From the produce of this connection, the most perfect he lambs are picked, to be used as breeding rams, when they are a year and a half old. This is repeated from time to time; and it is a rule never to use the same rams more than two years, so that rams and ewes within the near degrees of kindred may not be suffered to meet in copulation; as this, according to the general opinion, disfigures the shape of the progeny, weakens their constitution, subjects them to various diseases, and makes the females unnatural mothers. 2^{dly}, The lambs of the whole flock are examined at the first handling, which is when the males are castrated, and all the ewe lambs rejected for breeders, whose fleece or shape is exceptionable. 3^{dly}, It has been found that fleeces, which appear fine on the young lambs, sometimes turn out indifferent by the time of the first shearing. Young sheep, when brought to their first winter's pasture, attach themselves to particular spots, on which they choose to feed and reside more than on others; and the haunt which a sheep thus adopts, in the language of shepherds, is called its *haft*. From the nature of the food produced on these hafts, the fleece is thought, in some measure, to take its quality. A second scrutiny, therefore, takes place at the time of the first shearing; and the coarsest fleeced are again excluded from the breeding stock. If the stock can admit, the same thing is repeated at the second shearing. Careful shepherds think it a matter deserving attention, at the time of copulation, to keep the ewes, as much as possible, from beholding improper objects, that unfortunate resemblances may not be impressed on the young. Remarkable instances of this plastic sympathy, felt by sheep at the time of conception, are mentioned; such as lambs brought forth with the manner and gestures of a hare or a cat, which probably had by accident crossed the field of love. But the following was a more unlucky instance: A number of black faced hairy sheep, part of a drove which had been carried southward, straying back to their native home, passed, at the critical period, through the pastures of the fine woolled sheep. The breeding ewes gazed with admiration at the savage looking strangers; and, at yearning time, a good many lambs, exactly resembling them, were brought forth*.

Besides the mode of improvement above described, some of the storemasters have gone a step farther. A few of their ewes have been crossed with a fine woolled Spanish ram. Both rams and ewes of the Ryeland sheep have been introduced; the rams have been put to copulate with some of the Cheviot ewes, and the ewes covered by the Cheviot rams. The lambs are not unpromising; but those from the Cheviot rams and the Ryeland ewes look best. The fleeces of both are evidently closer than those of the pure Cheviot lambs. It is

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* Perhaps there might have been some black faced rams in the number, with whom they had an intercourse: But no such thing was supposed by those who told the story.

thought the offspring of both the Spanish and the Ryeland will prove as hardy as any, and such crosses, followed from time to time, would certainly tend to make the wool still thicker and finer; but, after all, it is much to be doubted that this can never be carried, with advantage, to any great extent, as these mixtures greatly injure the figure, which recommends sheep in a common market. There is one objection mentioned to the Ryeland sheep, which is, that, at the junction of the limbs with the body, they are apt to become naked in winter, and thus in danger of being benumbed, in those parts, by lying on the snow, or wet ground. The wool on the head of the Spanish sheep is also considered as a disadvantage in snowy weather; the flakes of snow, as they fall, lodging there, blinds the animal, and prevents it from going in quest of its food.

By that accurate and unremitted attention above mentioned, the quantity of breech wool is diminished, and the quality of the whole fleece improved; so that, in the course of the last 20 years, the intrinsic value of the wool is one third greater, and the wished for figure of the animal nearly attained. The shape and proportions aimed at are as follows: The head and ears long, neat, and slender; the neck high and full; the back broad, straight, and strong coupled; the shoulder and buttocks broad, and in due proportion to each other; the legs small, clean boned, and of a very moderate length; a long leg, like an inverted lever, being thought to render the animal less vigorous in travelling through deep ground, or working for its food among snow. Thus, with a fixed standard in view, those accomplished storemasters have so far gained their end, that a flock of some hundred ewes may be found, almost any two of which might pass for twin-sisters. Those sheep seem to be of a milder temper than the short kind. The ewes do not appear to be deficient as nurses, the lambs being generally in good order; nor are they less disposed to become fat; for fallow ewes, or such as had lost their lambs, were pretty good mutton at the time of shearing. Their owners think them as hardy, and as little subject to disease, as any other sheep; and, from the closeness and warmth of their fleece, more capable of standing the severity of the cold than those which have coarse open wool; for the same reason less subject to what is called *shelling*, in snowy weather. This is the snow lodging among the tops of the wool, and freezing like an incrustation around the animal, which proves very distressing. And they assert, that, from fair trials made, of bringing short sheep to feed along with their own, the latter have been found to be easier and sooner fattened; nor do they admit of any inferiority in the mutton. Nay, they are confident that the Dishley sheep, so much celebrated for their fattening quality, if compared to the Cheviot sheep, are not entitled to this boasted superiority: And they wish to submit to a fair experiment, by putting a number of the Cheviot kind, along with the Dishley, upon any inclosed pasture the owners of the latter shall choose, weighing both kinds, when put on and taken off the pasture, to ascertain which has gained most by feeding. The Cheviot sheep continue to advance till they are five years old, and then are held to be at perfection. The size, and weight of quarters, varies with the quality of the pasture on which the sheep feed.

The quarters of an ewe weigh from 10 to 17 lib. avoirdupoise each; the tallow about 8 or 9 lib.; those of a four year old wedder from 14 to 20 lib.; tallow from 10 to 14 lib. The quarters of a well bred sheep are nearly equal. Draught ewes sold last year, at Michaelmas, from 10 s. to 14 s. wedder, 3½ years old, from 15 s. to 21 s.; lambs from 4 s. to 7 s. at weaning time.

The ewes begin to lamb about the middle of April, and, for the most part, have only one at a birth; nor are more wished for; the nursing of one being thought a sufficient charge for the dam. There are always several ewes in every flock which bring forth twins; and there are instances of three at a birth, but seldom. In all such cases, as soon as a lamb dies, whose mother has no other charge, its skin is stripped off, and put on one of the lambs of a ewe which has more than one. When thus clothed, it is put to the mother of the dead lamb, who, from the smell of the borrowed skin, is induced to adopt it; and before the skin rots and falls off they are become familiar. To answer the same purpose, it is the custom in some places, to take a little blood from the ewe, and sprinkle it upon the lamb which it is wished she should adopt, or to pour a little of her milk on its head. The covering of the lambs is short, but, being close and soft, after it is thoroughly dry, the people here do not think it defective. All the care that can be bestowed on the young lambs, in such large flocks, is to lead them and their mothers gently to the best sheltered pastures, in bad weather: And, from the information I received, the loss of lambs last spring, which was from 10th to 15th, was not greater than what I heard of afterwards in other districts, where short sheep were kept. Though all the sheep here are white, there are instances of ewes bringing forth lambs partially or entirely black; but these are rare, scarce ever amounting to one in 100.

The finest wool is no longer to be found in those spots from whence it seems first to have originated. About Paston, Yetholm, &c. where it is said the finest carding wool was formerly produced, the wool is now of an inferior quality. As the nature of the wool market has not been such as to distinguish the finest wool by an adequate price, the inducement to increase the quantity of mutton and wool has been greater than to improve the quality of the latter. Hence all those who are possessed of a sufficient extent of land fit for cultivation, have turned their attention to raising turnips, and enriching their pastures by sowing artificial grasses. By such means more sheep are kept, and their size is enlarged, partly by feeding, and partly by crossing with mixtures from the Dishley breed; the wool increased in quantity, and, at the same time, becomes longer, and, as it is here called, *broader*, i. e. *coarser*. The farmers are still gainers, by the increase of wool as well as of mutton; as 5 fleeces make a stone, instead of 7 or 8, and the price not more than 1 s. 6 d. or 2 s. lower than the finest. The best wool is now produced in the middle pastures, and sold last year about 22 s. or 23 s. the white wool, the salved wool about 18 s. or 19 s. per stone; the weight, as formerly said, 24 lib. avoirdupoise, to the stone. The wool on the high coarse land, near the heads of the rivers, generally sells 2 s. or 3 s. per stone lower.

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Though all the wool of this district is good, that of some seasons differs from that of others considerably, both in quantity and quality. It is always coarsest in a wet year, and finest when there is a dry frosty winter. The wool of one sheep also differs from that of another, even in the best bred flocks, by 2 s. or 3 s. per stone; and some mention a considerable difference being observed between the growth of one year and another on the same sheep, which could not be accounted for from the nature of the season. It will require a little more than 8 fleeces, of all ages and kinds, at an average, to make a stone.

The markets in this neighbourhood, at which sheep, lambs, and wool, are sold, are held at Rink, Stagshawbank, St. Boswell's Green, the two Yetholms, Langholm, and Hawick. Hawick is a neat thriving town, a thorough-fare between the west of England and Edinburgh, &c. and the center of all the commercial transactions of a very wide, though thinly peopled, district. Here a great many of the payments for sheep and wool, of the country round, are made. A considerable woollen manufacture is here carried on. Carpets, coarse clothes, stockings, blankets, flannels, &c. are made, and carpet yarn spun, and sold to other places. Machinery for preparing wool, similar to that at Galashiels, is erected; and, it is said, between 500 and 600 packs of wool are annually consumed. Mr William Turnbull, wool merchant, has built a large warehouse here for the reception of goods, and undertakes to forward parcels as directed.

The greater part of the wool is bought by the Yorkshire staplers. They, or their agents, examine it at the farmhouses; and the bargains are generally concluded at some of the markets above mentioned. The merchants who have come into the country this year do not seem very eager in buying. The farmers are stickling for last year's price; but there is yet little fold. Some of the sheep, which are fold to be fed on other places, go to Kelfo, and the low grounds by the side of the Tweed, to be fattened on turnip, many to the pastures of Northumberland, and some to Yorkshire; but many of the Yorkshire graziers have an aversion to the fine woolled sheep, preferring the short ones, even those of the coarsest fleece.

The sheep here are all washed before shearing, by making them leap into a pool, and passing through it five times, or oftener, if the sheep can stand it, and it be found necessary for cleaning the wool. Those that are not sufficiently cleaned, are afterwards dipped and hand washed. The barren sheep are washed about the middle of June, and the nursing ewes about the end of that month, or beginning of July. The lambs are separated from the mothers, and kept in a fold or reeve while the latter are at the pool; upon returning from which they are again joined; but some still retain the custom of weaning the lambs before washing the ewes. Previous to the washing, all the rubbings, that is, the perpendicular latches on the faces of the hills, are cut down, that the sheep may not get at them, to rub and bedaub their fleeces. As soon as the fleeces are dry, the sheep are shorn; and the wool, after being neatly wrapped up in fleeces, is laid up either in a wool loft, or in a barn, with spars of wood under it. When a
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sheep is shorn, the master marks it upon the side or buttock with an iron, dipped in warm pitch, on which the initials of his name are marked in large capitals. This mark is called the *boof*. At this time, also, the sheep are examined, and a particular mark put upon such as ought to be sold off. The boof is put upon the lambs when weaned; and there are two other marks by which property is ascertained; the ear mark, which is varied by the joint consent of the neighbourhood, for the purpose of distinguishing, and the *birn*, or *burn*, which is a letter seared on the face with a hot iron. Lambs are weaned from the 10th to the 14th July, and are sent, as in Lamer-moor, to hard high heathy ground, to be summered, for six or eight weeks; this ground being generally saved for some time before, that there may be a fresh growth for their food.

The practice of milking is wearing much out here. Some, on very grassy land, milk all the ewes for the first fortnight after weaning; some select a few of the oldest and strongest ewes, and those which appear to have the most milk, and milk them only so long as to make cheese for their own families; and others milk none.

When the summering is over, the weaned lambs are brought to the hog fence. For this purpose, the low ground round the bottoms of the hills, where there is much shelter, and a great growth of heath and rough herbage, is chosen; and this pasture is mostly saved for several weeks before. If some cultivated land, the first or second year sown with artificial grasses, on which they may pasture for an hour in the day, can be added to this, it is reckoned a great advantage. In large flocks, the wedder and ewe hogs are divided into separate classes, and the wedders are preferred to the best pasture, not only because they are thought more delicate, but because it is the interest of the farmer to raise them as soon, and as much in the size, as possible. Gimmers and dun-monts also make each a class. The older wedders are either in one or two classes, according to the largeness of the flock and other circumstances. As soon as the oldest wedders are disposed of, the dunmonts take their room. The breeding ewes are classed according to their age, those of each year making a separate class; so that farmers, who keep their ewes to six years old, have four classes of breeding sheep, and those who sell off a year younger, three. But when the farm is so circumstanced, that all the diversities of food, for the different seasons of the year, are not found on every division, the ewes of different ages feed over the whole, that they may partake of the herbage produced on the different places in the different seasons. As the older class of ewes are sold off, the young ewes take their place. Six hundred sheep are supposed to be a sufficient number for one herdsman to tend. Ewes are not submitted to the embraces of the ram till they are two years and a half old. If, by accident, any are impregnated at an earlier age, unless they are remarkably strong, the lambs are taken from them as soon as they are delivered. The ewes come in season on or before the 15th November. If they are disappointed, the fit returns in from 14 to 17 days; but the first season is the surest for conception. The vigour of the rams, and the ardour of the ewes, is always greatest in a dry frost.

All the sheep of the first year are falved with a mixture of tar and butter; and the American tar is esteemed the best for the purpose. The proportions are various. Some, on the most sheltered ground, near the foot of the rivers, use no less than 6 lib. of butter (22 oz. to the lib.) to a Scotch pint of tar; but the most general, and the most approved mixture, is 3 or 4 lib. to the pint; and one pint, thus mixed, is allowed to falve between 7 and 8 sheep. Gimmers and dunmonts, or sheep of the second year, are also generally falved, though sometimes kept white. Older sheep are feldom falved all over; sometimes slightly on the back, neck, and upper parts of the sides, which is called falving from short shed to short shed, but oftener left white till their fifth year; and, if they are kept longer, they must then be falved, otherwise the quantity and value of the wool would be greatly diminished. There are certain pastures in this district, supposed to have a peculiar warmth in their nature, which renders the falving of grown sheep less necessary. Places where the red shivery rock is seen, and where the fox-glove (*digitalis purpurea*) is found growing round the sides of the hills, are reckoned of this quality. There are other places where these marks are not so evident, on which it is found sheep may be safely trusted without falving; and there are others, again, on which unfalved sheep succeed, in a year moderately dry and mild, but not in irregular and inclement seasons. And these qualities of the soil can only be known by experience. On all grounds proper for keeping sheep unfalved, falving is found to have less important effects. The falve consumes and wears away, so as hardly to be observable, against the time of shearing; and the quantity and quality of the fleece is scarcely so much improved as to compensate the expence and trouble of falving, and the annoyance which sheep suffer by the operation. The falve costs from 4 d. to 5 d. a head. Tar is reckoned the most important ingredient; and no falve, of which it is not a component part, is thought valuable, either for the growth of wool or for the defence of the animal. The end of October is said to be the most proper time for falving hogs, the growth of the wool for the season being thought then to be over. As the shedding of the fleece, in order to give the falve admission into the skin, discomposes the wool, it is believed to have a tendency to stop the growth; and therefore early falving, as giving a premature check, is thought improper. The older sheep are falved a few days after the hogs. The fleece is shed all over the body; each shed not being more than an inch from the last, and the falve drawn along in small quantities with the point of the finger, and neatly applied to the skin. Some talk of mixing the falve with a quantity of new milk, or butter milk, to make it spread better. It is difficult to conceive how such discordant parts should unite; but those who have made the trial insist that it has a good effect.

The small parcel, No. 3. is specimens of the wool of Cheviot sheep from different farms, both falved and white. No. 4. is from Cheviot sheep crossed with foreign mixtures.

Hay is always provided as winter food for the sheep. This is either made from marshes and flat places among the pastures, or from natural or artificial grasses upon land which has been cultivated. Those whose farms lie about the outskirts of the hilly district, cultivate a part of the plainest ground for turnips and hay. Those who reside in the more central parts, have either farms rented in the nearest part of the country capable of cultivation, for the sake of winter food for their sheep, or buy turnips from the farmers on the nearest low lands. Hay is given at all times of need. The coarse hay in the early part of winter, and afterwards that which is finer. All the sheep get hay in snow; but the hogs, as being weakest, are most particularly attended to. From half a stone to a stone of hay per day is allowed to a score of sheep; and the morning, or a little before sun-set, are reckoned the best times for feeding. Turnips are given more or less liberally, in proportion to the quantity the owners have to bestow. An instance is mentioned of dividing large turnips into four, and giving a quarter to each of a flock of hogs daily, with a little hay afterwards; and in this way they were brought through a pretty severe winter with very little loss. After a stormy winter, all the weakest sheep are conducted to some low part of the country, and fed on turnips, or good pasture, till the weather be mild, and the hill pasture risen to support them. All who have turnips enough, wish to give some to the breeding ewes once a day, for a month before lambing, to fit them better for the approaching task of nursing. As soon as the lambing begins the turnips are withdrawn, as eagerness for this food takes off their attention to the tender lambs. The want of inclosing is an inconveniency severely felt in the conduct of the pastoral business here. The farmers are not so sanguine as to expect the whole of their extensive pastures should be surrounded with walls; but they earnestly wish for a few inclosures for different purposes; particularly, an inclosure near the cottage of every herdsman, upon which, by applying the dung of his cow, hay might be raised for supporting the sheep in winter; hay of the same nature with the ordinary pasture having been found most suitable for the sheep; and, when the hay is with-held, the sheep agree better with the grass. A few small inclosures for sheep affected with the sturdy, or lameness, and for separating from the flock such as were infected with contagious disorders, would also be very advantageous. Such inclosures on different parts of the farm, with stripes or clumps of trees on some side of them, would shelter the country, and tend greatly to the comfort of the flocks.

To enter into the detail of tending, of stells, and all the minutiae of shepherdism throughout the year, would neither be amusing nor instructive. It would be stale to those who are conversant in the business, and scarcely intelligible to those who are not. Nor is it possible that this, or any other practical art, can be learned without applying practically to it. I shall therefore conclude this Section with some account of the diseases to which the sheep are liable.

There are many diseases mentioned, to which sheep and lambs are incident :

1st, When the season mild, and grass plenty, lambs sometimes sicken, and die soon after they have begun to suck. This is called the *milk ill*, and no cure for it is known.

2^d, The *liver crook*, or *strings*, has sometimes carried off a good many lambs. This is imputed to breeding too near in kin. No cure.

3^d, The *grass ill* sometimes attacks lambs when they begin to eat. It is a black purge, for which no cure is known.

4th, The *leaping ill* has been hurtful only in the western parts of this district, and still more prevalent and fatal in the more westerly parts of Roxburghshire, about the heads of the Tiviot and Borthwick rivers, where, for some years, it almost laid the country waste. It attacks the lambs in the month of May, and, being of a very contagious nature, afterwards communicates to the whole flock. It seems to be a violent spasm, contracting some of the limbs, or drawing the head and neck to one side. The patient sometimes dies in a few days, and sometimes lingers for a considerable time. A fifth of the whole flock has been carried off by this disease in a season, so that many farmers were ruined by it. Nor were its ravages confined to sheep. Hogs, dogs, and poultry, by passing over the ground, and horses and cows, by eating the grass where the sick were kept, were seized with it. No one pretends to account for the original cause of the infection; but whatsoever disturbs, or suddenly alarms and surprises the flock, is thought to awaken the disease. It has sometimes been cured by repeated bleedings; but, as copious evacuations of this kind are found to be highly injurious to sheep, this cure is not much in esteem. The medicine which has been most frequently applied, and not seldom succeeded, is a bolus made up of powder of zinc mixed with barley meal. A sixpence worth is the quantity proposed for the cure of a sheep. But, after all, those which recover are greatly reduced in value, by the weakness and loss of flesh incurred, during the disease and convalescence. The virulence of this fatal malady, which has so frequently thinned the flock, has been gradually abating within these last five years; and now its visits are neither frequent nor very fatal; and the cause of its going off can be no more accounted for than that of its coming. It is remarkable, that, though the sheep bred on the pastures where the disease raged are free of it, those which come from ground where it has not been known, if they but pass through the infected country, are immediately seized with it, and especially those which come from the east westward.

5th, The *sickness among hogs*, described in Section I. is felt here, in a greater or less degree, in different pastures, and sometimes goes the length to carry off four or five in a score. There are three kinds of this disease mentioned, or three diseases known under one general name: 1st, The *dry sickness*, attended with great costiveness. This is sometimes cured by oily injections, and extracting the hard excrements from the rectum. 2^d, The *watery sickness*, attended with much swelling. The cure prescribed for this is diuretics, gentle purging, and a small quantity of blood taken, and, at the same time, to exercise the patients, by rolling them, and making them run. 3^d, A *wet surfeit*,

feit, with much swelling. A mortification between the fell and the flesh soon ensues. Incurable.—There is some difference of opinion about the cause of the sickness. It is pretty generally admitted, that the full feeding in autumn may tend to increase it. But if young sheep were not well fed then, they could not stand the winter; and, if they should survive it, would not thrive so well next summer. The farmers, therefore, say, that they would rather lose two of the sickness in October, than one of weakness in the spring. Pasturing on new sown grass, particularly rye-grass and rib-grass, once a day, is allowed to be a good preventive. Turnips, for some time, were believed to have the same effect; but it has lately been found that this is not the case; the hogs which got turnips having died fully as fast as those which got none. Even sheep of a more advanced age, which are seldom subject to the sickness, when confined to feed on turnips, have died of this disease.

6th, The *sturdy*, already described, attacks sheep of a year old; and it is computed, that about 1 in 30 are seized with this disorder. The universal cure here, is to search the skull for the infected place, and to direct a probe up the nostril, towards it, in order to break the bag, and let the water discharge. In performing the operation, care is taken to hold the chin close to the breast, that the instrument may not touch the top of the spinal marrow, as, in this case, immediate death is the consequence. The operation requires sometimes to be repeated a second and a third time; and successful operators cure three of five in this manner. Various opinions are entertained respecting the cause of this distemper. Some say it is most frequent after a windy and rainy winter. A surmise has been lately broached, that it might be prevented by docking the tails of lambs at an early period. What has given rise to this is, that a ewe sometimes, in the ardour of maternal affection, chews away the tail from her new fallen lamb; and shepherds have observed, that none of these are seized with the sturdy. It has also been observed, that, when lambs have been docked, a quantity of water has sometimes been found lodged at the point of the tail. Hence it has been supposed, that this water may increase, and proceed along the spinal marrow, till it make its final lodgment in the seat of the brain. I am informed, however, that this supposition is opposed by the doctrine of modern anatomy, which denies that the spinal marrow can admit the passage of any fluid along its course. Nevertheless, as docking eases sheep of the load of dirt which adheres to the tail in passing through mires, and tends to keep the breech clean, the practice cannot be improper.

7th, The *pinning*, most frequent between Cheviot and Carterfell. This disease, which gradually consumes the blood and the strength of sheep, generally appears in the month of March; and sheep feeding upon land which lies immediately upon the red rotten rock are most subject to it. The only remedy is to remove them in time to a different pasture; and the best change is land covering lime or free-stone rock.

8th, The *breech fleg*. It is, for the most part, corruptly pronounced *braxie*, the name given to the sickness among hogs in the west country: This is a violent flux, accom-

panied with a fever and great thirst. It appears in July, and is thought to be contracted from sheep being overheated by running in the warm weather, at the time of shearing and weaning the lambs, and suddenly drinking cold water after *. This disease is very infectious, and, when contracted by a few, is in danger of being communicated to the whole flock, and raging for a considerable time. It is then at the worst in September, and proves very destructive. Some give decoctions of tormentile roots, or logwood, internally, for this disease, or the kind of red ochre commonly called *keel*, pounded, and mixed with butter milk. But the most common method of cure is to confine the sick in a paddock, keeping them from drinking water, which is reckoned injurious, and feeding them with sweet hay. When the weather is warm, bathing in the pool is recommended.

9th, *The rot*. The sheep which feed on some of the wet coarse pastures near the heads of the rivers, and on the flats along the north side of the hilly district, are subject to it. It is attributed to wet summers, or to hunger obliging sheep to eat unwholesome food in winter. Formerly, agriculture seems to have been more extensively carried on in Roxburghshire than at present, and paring and burning had been practised as long as it would produce effect. The land which has been thus exhausted bears a thin perpendicular growing grass; and it is said, that almost all the sheep which pasture upon it are seized with the rot; so that it cannot be used with safety for sheep pasture. This disease is reckoned incurable: But there is one instance of a gentleman, of the medical line, having administered something to a number of sheep supposed to have been infected with it, all of which recovered. He proposes to repeat the experiment, and, if successful, may probably communicate it.

10th, *The scab*; a well known and very infectious disorder among sheep. For the cure of this, a mixture, composed of the decoction of tobacco and oil of turpentine, is applied to the fore. The same thing is sometimes laid lightly over the whole body. Some think the tobacco is of no other use, than that its disagreeable taste prevents the sheep from clawing with their teeth, to irritate the sores and break the fleece. Turpentine alone is sometimes applied; and, if laid on too plentifully, deprives the sheep for a little time of the use of its limbs, but seldom has any other bad effect. Boiling pitch applied to the sores, immediately after shearing, is reckoned a very effectual remedy; and is said neither to hurt the sheep nor the wool.

11th, *The foot rot* is most prevalent in September, and is also very infectious. It is prevented by paring the hoofs when the sheep are shorn; and cured by the application of caustics. It scarcely ever proves fatal here. The sheep which go on pastures where the soil is peat earth are not subject to this disease.

12th, *The leg ill*, or *black leg*, an inflammation in the legs, which, if not speedily prevented, mortifies, and occasions the death of the animal. It is caught by trampling through

* Feeding on ground which has been water flooded, or where much of the dung of cattle has been dropped, is also thought to occasion this disease.

through stagnant mires about the time of shearing, &c.; and, notwithstanding that great pains is now taken to clean and sweep the clipping folds, and all around them, every day, the disease is now said to be more frequent than formerly, when less attention was paid. The danger is prevented, by bathing the sheep through the pool as soon as they appear to be infected.

13th, *Blindness*; which sometimes seizes sheep in the summer months. This sometimes goes off of itself, and is generally cured by letting a little blood under the eye.

To this list of diseases, an accident not uncommon, which, though no disease, is sometimes the cause of loss to the sheep-master, may be added. In the beginning of summer, when sheep begin to thrive, they have a great desire to rub themselves, and for this purpose lie down and turn on their back. In this situation, the fleece prevents them from recovering. In vain they toss and spur. The violent exertion makes the body swell, and disables them the more from regaining their legs. In this helpless state, perhaps the ruthless raven, or carrion crow, impatient of the promised feast, without waiting till the victim has breathed its last, tear out its eyes, or penetrate into its bowels. Those which are lost this way are said to be *aw-welled*. There are other accidents by which sheep are frequently lost, which need not here be enumerated. It may, however, be remarked, that, though there are plenty of foxes in this district, they seldom attack either sheep or lambs.

The only idea I can give of the number of sheep kept on those extensive pastures, is by the quantity of wool annually shorn. A person, who has the opportunity of being very well informed, has been at pains to collect the amount, which he has obligingly communicated to me, extending in whole to 1916 packs, each containing 12 stones. Thus, supposing that it requires a little more than 100 sheep to yield one pack, make the number of sheep about 200,000.

There are many acres, within the limits we have been describing, which will do more than maintain a sheep; but there are also places to be found of considerable extent, yielding very little esculent herbage. The mean extent requisite to feed each sheep may, perhaps, be above $1\frac{1}{2}$ acres, and the rent per head, at an average, from 3 s. to 3 s. 6 d. Farmers think their rents very high; and landlords are still wishing to raise them higher. It does not appear, however, that the profits of the most successful store-masters are greater than the capitals which they have employed, the skill and attention which they bestow, and the variety of labour and fatigue which they are obliged to undergo, deserve. Nor is the pastoral business less difficult and hazardous than others: For it is only when much knowledge and attention are accompanied with good fortune that the success is considerable; and failures among people of that profession are far from being rare.

SECTION V.

ON the morning of the 5th July, having hired a guide, I set out for Liddesdale; and going down the tract of the Liddel, I stopt at Castletown. On the 6th, I passed from thence by Canoby and Langholm to Ewesdale; and, having traversed some of the pastures of that district, I stopped at Mosspaul. On Sunday the 7th, I went from Mosspaul to the Chapel at the head of the Tiviot. After sermon, I dined and had some conversation with the principal sheep-farmers in that neighbourhood, and went to Borthwickbrae in the evening. On the 8th, I waited on Mr Ogilvie at Branhholm, and traversed some of the neighbouring pastures. On the 9th, wishing to penetrate into the central parts of the country, I set out from Borthwickbrae on foot, crossed the moors to the Etterick, and from thence to the Yarrow, and went up near the banks of the latter to Henderland, near the foot of Meggit Water, and along the side of St Mary's Loch, and the Loch of the Lowes. From the head of the latter, I went through the mountains to the head of the Etterick, and, passing from one farm to another, returned to Borthwickbrae on the afternoon of the 11th. On the 12th, I took leave of Mr Elliot, from whom I had received much civility, and went up the Borthwick, by Creak and Ropelawshields, and over dreary mountains, to the Timau, a branch of the Etterick, and up that stream and over the height, to the head of the Tamleucher, a branch of the Esk, and down this stream to Eskdale moor. Here I had the opportunity of meeting many of the most considerable farmers of the country around, assembled at the sale of a farm stock, and remained with them the rest of the day. In the evening, I went down the Esk, and stopt with Mr Curl, at a farm called Yetbyres. On the 13th, having traversed some of the neighbouring grounds, and examined the sheep, I quitted the banks of the Esk in the afternoon; and, crossing the Black Esk, I went over the mountains, by Hutton church, to the head of the Dryffe, a little river which falls into the Annan, and stopt with Mr Stewart at Hillside, in the evening.

Having hitherto, so far as I had opportunities of investigating, minutely described the kinds of sheep, the manner of managing them in different seasons and circumstances, the diseases and accidents to which they are liable, and the means used for their preservation, to avoid a tiresome prolixity, I propose, henceforth, to be less particular, taking notice only, as I go along, of such things as differ materially from what has been already described, and are most worthy of attention.

The long Tiviotdale or Cheviot sheep have been kept in Liddesdale, Ewesdale, and about the heads of the Tiviot and the Borthwick, for time immemorial.

In going westward from the head of the Jed, after passing the summit, from which the water descends on the one side to the east, and on the other to the west running
rivers,

ivers, the hard columnar rock is lost, and the horizontal lying free-stone rock begins to appear. As you descend into the valley, the strata usually accompanying coal and lime are seen. This is

“ *An unfrequented vale —*

“ *No sound to break the silence, but a brook*

“ *That bubbling winds among the weeds.*” FAIR PENITENT.

The soil is damp. Springs burst forth every where; and the surface is covered with a rank luxuriance of coarse herbage. Rushes (*juncus conglomeratus*) and tall hair grass (*aëra cespitosa*) are very prevalent; at the same time, white clover (*trifolium repens*) in great vigour, is every where mixed. Heath and bent are only to be found on the tops of the hills, which are covered with a stratum of peat earth. On some of the slopes sport abounds. Rains are very frequent in Liddefdale, and fogs almost perpetually hover over it. Such is the luxuriance of growth here, that the withered herbage must be burnt in the spring, to let the sheep get at the new grass. Some draining has been attempted, but nothing to what the wetness of the country would require. It is alledged that draining, in this rank soil, by raising a sudden growth of soft grass, is bad for giving sheep the rot, for some time at the first.

The wool is of a fine carding kind, but some of the sheep seem to carry more breech than those of the east border. The flocks are classed as described in last section. Sheep of all ages are salved. Two pounds of butter, mixed with a pint of tar, lays four sheep; and nothing less is thought necessary to defend the animal, and preserve the quality of the wool. In the time of the American war, when tar was dear, and wool of little value, sheep were left white, or very lightly salved. At that time, the sheep became weakly, and much afflicted with the scab, and the wool harsh and dry. To preserve both sheep and wool from degenerating, it is also found requisite to bring rams, from year to year, from the east border. The wool sold last year from 14 s. 6 d. to 19 s. per stone of 25½ lib. avoirdupoise.

Besides the diseases enumerated in last section, another, called the *thorter ill*, is mentioned. It differs from the leaping ill in this, that it comes on by fits, attacks the whole body at once, and is deemed incurable. The leaping ill still continues, and in some years lately, has carried off a third of the lambs, besides old sheep. The loss by the sickness is computed at 10 *per cent.*; by the sturdy, 2½; by the rot, 12.

The bad market at Stagshaw for long sheep is much complained of. The short, it seems, were preferred by the buyers, and sold more readily, and at a higher price. The dealers who attend this fair, however, have a partiality for the short sheep*.

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* I have been informed that the dealers who attend this fair, however, have a partiality for the short sheep; and that those who go to other markets, as Hardcastle in Northumberland, &c. would not purchase a short sheep or lamb, if one of the real Cheviot breed could be had.

All the sheep are washed before shearing. The lambs are weaned before the washing, and the ewes are milked for six weeks.

From the New Town of Cafiletown, planned by His Grace the Duke of Buccleuch, and now building, the ride to Canoby is through a plain country, pleasantly interspersed with thriving coppices. The soil is of a clayey nature, covering a free-stone or lime rock. Coal mines have been discovered, and are now working in Canoby parish. Here there is much flat moor, having a thin stratum of peat earth, covered with a close turf of the *juncus squarofus*. The peat earth here, and in many other places through which I had passed, is composed almost solely of the decayed roots and foliage of this plant. Many little neat cottages are planted, in this moor, along the side of the road; and the possessors, by draining, digging up the ground, so as to mix the clay with the peat earth, and applying lime, have raised patches of excellent potatoes, oats, and flax. The neighbourhood of Canoby church is populous; many of the inhabitants are weavers; around it is a rich and highly cultivated corn country, where provisions are plentiful; and the country produces coal and lime; so that one would think, there are few places better adapted for an extensive woollen manufacture. From Canoby to Langholm, along the Esk, the country is well wooded, and very beautiful. At Langholm, the surface begins to be mountainous. The pastures are mostly green and dry. Near this the Ewes river falls into the Esk, and the sheep pastures of Ewesdale commence. The river Ewes flows southward, through a very narrow valley, bordered by two parallel ranges of lofty hills. The soil of these hills is dry and fertile, producing almost all the esculent gramina to be found in other parts of Scotland. On the summits there is generally a stratum of peat earth, producing heath and bent. Towards the bottoms, the sweet grass is intermixed with some species of the *carex*, and other coarse herbage. The climate is reckoned moderate. On account of the south exposure, the shelter of the higher hills on the north, and the vicinity of Solway Frith, snow seldom lies long.

The flocks consist of from 1500 to 2000. No classing takes place, but dividing the he or barren sheep from the nursing ewes. These pastures are healthy. The greatest loss is suffered by weakness in the spring, there being no provision made for winter or spring food for the sheep. About a fourth part of the lambs died this spring, when new lambed. The rains are frequent and heavy; and, on that account, it is thought necessary to fatten the sheep strongly. Two pounds of butter, and a little oil, mixed with a pint of tar, serves six or seven sheep. Seven fleeces make a stone of wool, of 25½ lib.; and this fold last year for about 18s. The wool is said to become coarser here; to prevent which, rams, and sometimes a few young ewes, are brought from time to time from Beaumont or Kale water. The rams are admitted to the ewes about the 20th November; and to the gimmers, which are previously separated, a fortnight later. The lambs are weaned about the 1st of July, and sent to the heights, with the barren sheep, for a fortnight. The ewes are milked, for six weeks, in little folds made

of spars of wood, moveable at pleasure. A little more than an acre serve to pasture each sheep; and the rent paid, per head, is about 2 s.

The pastures around the head of the Tiviot are of a mixed nature; sometimes dry, with sweet herbage; sometimes patches of heath and bent intervene. Near the foot of the hills, and in the flat bottoms, the ground is marshy; and there draining is practised. The plain ground, proper for making winter provision for sheep, is inconsiderable. The climate is stormy, and the winters long.

The flocks are large; and the manner of classing is much the same as on the east border. Most of the ordinary diseases to which sheep are incident are felt here. Instances of the pining are very rare. The sturdy is frequent. The leaping ill is not much abated. The loss of hogs by the sickness is computed at 15 *per cent.* But the breechfeugh, when it appears, is thought the most dreadful disorder.

The sheep have been much improved of late, both in figure and fleece; and this the farmers think has been carried fully as far as is consistent with the nature of the climate. The wool, which is all tarred, sold last year for 16 s. per stone; but it is feared it will fall in price this year. The mode of improvement is to bring one or more proper rams from the east border, which are put to copulate with the best ewes selected from the flock; and the breeding rams are chosen from the progeny. The wool is said to degenerate here on the same sheep, as it advances in age. Even among the best bred flocks, some of the fleeces become what the Yorkshire staplers call *coat*. This is a fleece thin at the bottom, open at the top, and the middle padded together, in such a manner, that it can hardly be forced asunder. It is attributed to the frequent storms of rain.

In the present state of the markets, the farmers rather regret the refinement they have made. At Stagshaw Bank, the fine woolled Dunnmonts were despised; and those that were sold, brought no more than 10 s. 6 d.; whereas the coarse woolled ones, of the short kind, went off at 13 s. The dealers at this fair have, perhaps, never given a fair trial to the real Cheviot breed.

In going down the Tiviot and the Borthwick, the country opens, and the declivity of the sloping banks becomes more gentle, leaving some space for employing the plough. The hard slate-coloured rock is the basis of the heights; and the heads of the columns rise irregularly, making the face of the country rugged. The summits bear sweet short grass, and the hollows are generally spongy, bearing coarser herbage. In some of the largest and deepest of these cavities, are found beds of excellent shell marl, under a thick body of peat earth. This seems to be a solution of the rocky particles, washed down by springs, and sedimented in a standing pool, intermixed with the shells of the small mud snail, which delights to reside and propagate in such a bed. What time it may have taken to collect those beds of marl, it is impossible to know; but, so often as a marl pit is exhausted, it might be proper to clear out the basin, to stop the drain which carries off the water, and see how soon the same cause
would

would produce the same effect. Nay, it might not be amiss, for those who have proper opportunities, to carry the experiment a little farther. Among all the mountains through which I have passed, I observe, that besides the solid nucleus of rock, which seems to bid defiance to time, there are always shivery parts tending to dissolution. Where these can be easily got at, they might be turned out to the action of the air, and afterwards laid on the surface, where they would probably, in time, have a good effect in raising either grass or corn. As this short digression is meant as a hint to promote the increase of food for sheep, as well as other animals, it is hoped it will not be thought impertinent.

The fields near Branhholme, which are inclosed and sheltered with trees, are excellent pasture. On the north side of Borthwick water, some inclosures are made. The hills are low, and the acclivities easy. In some places the red shivery rock appears. The soil dry, with a mixture of short heath and grass: But much of the land is spongy, and the herbage long and coarse. In general the pasture is plentiful.

The wool is of a good quality, and sold last year at 18 s. per stone of 24 lib. though very grossly tarred; it being thought necessary to salve strongly on account of the wetness of the country. The length of the staple is from $2\frac{1}{2}$ to 3 inches. Eight fleeces make a stone.

The quality of the wool has been greatly improved of late. Formerly, the quantity of hairy wool on the breech was considerable; and a ring, equally coarse, round the neck, was very common. It is now supposed to be between one half and a third of its value intrinsically better. It has been meliorated by bringing sheep from the east border; sometimes both rams and ewes; but rams alone, though the slowest, is reckoned the safest way. It is the general testimony here, that sheep brought from the east of the head of the Jed, westward, degenerate in carcase and fleece, and when carried eastward improve:—That sheep here, of two years old, are nearly equal in appearance to those on the east border; but that after this they do not make the same progress. This, to a stranger, appears the more surprising, as many of the pastures here seem to be rather more plentiful than those around Cheviot. The reason assigned is, that, from the milder temper of the air, and the more diversified nature of the pasture on the east border, the sheep find a more durable sustenance. The best three years old wethers sold last year at 15 s.; ewes, at six years old, from 10 s. to 12 s. Milking ewes is much given up. The sickness is said to be worst on heathy ground, and carries off from $\frac{1}{3}$ to $\frac{1}{12}$. An acre of the best hill pasture is not sufficient to graze one sheep; and the rent is from 2 s. to 3 s. per head, according to the healthiness of the ground.

Between the Borthwick and the Eterick, a great deal of the land is wet and spongy, and the rot has prevailed much for two years past. Almost half the lambs died this spring, owing to the weakness of the mothers. Sheep of all kinds and ages pasture together. Those whose flocks require the attendance of several shepherds, give each a charge,

charge, consisting of part of every kind; so that every shepherd carries on what is called *a running flock*.

Long sheep are pastured along the Etterick, up as far as the upper confines of Yarrow parish, and up the Yarrow to Yarrow church. On all the pastures farther up these rivers, the sheep are of the short kind. All along the Yarrow, for two or three miles above the church, the hills are pretty dry, and their sides covered with a mixture of neat short heath and fine grass. The summits are frequently covered with peat earth. By the sides of the river are fine narrow valleys, of a dry fertile soil: The oats were in ear 10th July. The hills farther up stand close to the river, leaving no plain, and become higher and more steep on the sides. The number of sheep in those two wide parishes exceeds 90,000. At the foot of Meggit water, some of the hills are very steep and rocky, but abounding with sweet pasture, with some brush-wood near the bottoms. Farther up the Meggit, the sides of the hills become more moist, yielding great abundance of coarser herbage. Near the head of the Yarrow, particularly on the south side of the river, the pasture is also wetter and coarser, and there the rot is complained of. On the narrow plain by the side of the Meggit, the farmers have begun to make some hay for wintering their sheep. St. Mary's, and the Loch of the Lows, may be considered as one lake, they being divided only by a low narrow ridge of rock, through which there is a communication. The steep sides of the hills, along both sides of this fine lake, are covered with a close verdant carpet of fine short grass, except in some few spots where the surface is scarred with fragments of the red crumbling rock tumbling down. Near the bottom of those hills, the pasture is sometimes very rich and abundant. At the head of the lake is a large flat marsh, from which the hills rise all around, moist, black, and rugged. The tops of these hills are broad and flat, covered with peat earth generally from two to three feet deep, and bearing such herbage as is found in other places in the like soil and situation. About the head of the Etterick the surface is very rugged. The columns of blue rock stand in an inclined posture, showing, frequently, a sharp edge on the surface; the cavities between these is moist and spongy, producing coarse herbage. In other places the surface is more smooth and dry, bearing a mixture of sweet grass and heath. In descending along the river the hills generally become lower, and the pasture better. Where there are wet places drains are drawn.

The inhabitants of these central parts represent them as subject to violent storms; and, indeed, the effects of the weather upon the houses, and the measures taken to prevent them, evidently show that it is so. The rains and snows are great and frequent; the air is cold in winter; the spring and autumnal frosts are severely felt; the season of vegetation is short; and the spaces capable of producing winter food inconsiderable; consequently the winter hardships of the flock must be great, and the artificial aids which can be afforded to them trifling. But towards the foot of the Etterick, where there is any plain ground, considerable attention is paid to the sheep in winter. Tur-

tips and hay are cultivated, and the young and the weak are kept upon the low sheltered ground, where there is hay put in racks, and turnips strewed on the field for their accommodation.

Various are the opinions held respecting the comparative properties of long and short sheep. Most of the farmers near the foot of the rivers, who possess the long sheep, assert that they are as hardy, as healthy, and as easily maintained, as the short. Some indeed acknowledge that the young lambs for the first fortnight, and even the hogs for the first winter, are rather more delicate; but, at more advanced age, they contend, that this kind is subject to fewer diseases than the other. At the same time, they confirm the testimony given at the head of Borthwick water, that the fine woolled sheep of the east border tend to degenerate; which, however, can be obviated by paying proper attention to the crossing with rams from that quarter. Here it may be proper to observe, that it seemed to be the opinion of the judges appointed to determine the premiums given by the Trustees for the improvement of sheep in Selkirkshire, that the attempts toward the improvement of the fleece may be carried too far: For they rejected the finest woolled rams, and adjudged the premium to those which were somewhat coarser fleeced, for this reason, that they thought the latter best adapted to the nature of the country. On the other hand, all the owners of short stock alledge, that their kind of sheep are more hardy and shifty in straits than the other; that the same pasture will maintain a greater number of the former than the latter; that none of the trials made to introduce the long sheep into the pastures near the heads of the rivers have succeeded, a greater number of the lambs dying in the spring, and the sheep being always more reduced in winter; that butchers at all times prefer the lambs of the short sheep to those of the long, and give a higher price for the former; and that when ever the markets are dull, short sheep sell better than the other, and higher in proportion to the size. Such, say they, was the case during the American war, and such is the case at present. But, though they seem to be convinced that it would not be safe nor profitable to introduce a new kind of sheep, some have bestowed attention to improve the wool of their own, by selecting the finest woolled ones for breeding, in some such manner as has been already described. Others attend only to the carcase, paying no regard to the fleece.

The fleeces of the short sheep are reported to be rather heavier than the long; but, upon the whole, from six to eight fleeces make a stone. The wool of the long sheep sold last year from 15 s. to 18 s. per stone; of the short from six to seven*. The sheep are washed before shearing, except about the heads of the rivers, where there being no plain banks nor smooth bottomed pools, and the sheep wild and spirited, it is thought they would be liable to many accidents in the operation. About one third of the lambs died about the head of the Etterick this spring. The leaping ill is here called the *trembling*, and is not yet gone off. The cause and prevention of the sickness among hogs is talked

* No. 5. is a specimen of the former, and No. 6. of the latter.

talked of with much uncertainty. Some blame the fayed grafs on the hog fence as the cause of it, and say, that it becomes less frequent by giving up that practice. There is a fact relating to this head which merits attention, as it may serve as a clue to those who would wish to inquire into that important desideratum in the pastoral business, the prevention of this general malady among young sheep: *It is, that, when the hog fence is made upon ground which has before been pastured by old sheep, the hogs are little subject to the sickness*; but if this ground be used for the same purpose for a few years, the sickness returns. On the pastures near the foot of the rivers, formerly, the sheep were not fayed; but, of late, storemasters have found that faying contributes not only to the health of the sheep, but to increase the quantity and improve the quality of the wool; and it is now universally practised. Nothing occurs with regard to the management and classing of the flock, which has not been described in the preceding sections. About the foot of the rivers, whenever the flocks are large, the classing is much the same as in the east border.

The high ground between the Borthwick and the Timau exhibits a most disgusting view. The whole face of the fields is covered as it were with a mass of sponge, composed of decayed vegetables. The chilling damps, lodged in this, having long ago destroyed the capacity of producing plants fitted to the taste or food of animals *, nothing but an obscene growth arises, annually, to fall down, and form a receptacle for a greater quantity of that cold stagnant moisture, which sends forth from time to time the hoary mildew, the bane of vegetable life, and extends the contagion of sterility wider over the country †. In vain the eye searches around for some verdant spot on which it may rest and find refreshment. Nothing green is to be seen but a long leaved plant, thinly scattered up and down, and fluttering in the breeze. It is called *flying tent*. I saw no parts of fructification belonging to it; and was told it never produced any visible. It rises in June, and falls down, and is blown away by the wind, about the beginning of August. This part of the country is apt to recal to one's mind those dismal fields created by the powerful imagination of Milton,

“ *Where all life dies, death lives, and nature breeds,*

“ *Perverse, all monstrous, all prodigious things.*” *PARADISE LOST.*

All along the Timau, and over the summit to the head of the Tamleucher, the ground is hilly, moist, and gloomy. The sheep are strong boned and well bodied; the fleeces gray and very hairy. The price of wool last year was 4 s. per stone unwashed. No. 7. is a specimen. The storemasters say that the wool of all sheep becomes hairy by living in-

* The ruins of a church at Buccleuch, and the vestiges of other buildings, show that this has once been a better country: And when we find a scar in the moor, the red soil, so fertile in other places, may be seen under the spongy mass.

† The ash trees in Eikdale moor, on the 12th July, were naked as in December; the frost, some days before, having destroyed all the leaves.

in this inhospitable region, and that it becomes softer and finer if they be carried from this and kept on better pastures, for instance, towards the foot of the Etterick.

Near the head of the Esk the pastures are also marshy, coarse, and wet. About Eskdale church they begin to improve, and from thence, downward, are pretty good and plentiful, but probably rather wet in winter. Below the church, long sheep have been pastured for 60 years and upwards. It does not seem to be known from whence, or by whom, they were introduced. It is said the sheep of the east border do not thrive here. For some time rams were brought from Smallholm; but now, to avoid breeding in kin, it is more common for farmers to exchange rams with one another.

To the list of diseases which have been already enumerated, two, which happen here, may be added; the *headswell*, which is cured by cutting the ears, and making them bleed copiously; and the *yellow*, which occur seldom, but are thought to be incurable. As a cure for the *trembling*, gun-powder and rough ginger, in water, is given. The *rot* is very injurious in Eskdale moor, and is sometimes cured by sending the patients to graze on salt marsh. It is thought it might be of service in this disease to feed sheep with hay, on which salt had been sprinkled when it was put up. The *sickness among kags* is not very prevalent here. It is worst on the driest pastures.

The short Dunmonts have sold this year at 13 s. 6 d.; the long 2 s. or 3 s. lower. The price of short sheeps wool, last year, was from 4 s. to 8 s. per stone; that of the long sheep 18 s. 25 $\frac{1}{2}$ lib. avoirdupoise make a stone. About seven fleeces make a stone.

All the sheep are strongly salved: The composition is 1 $\frac{1}{2}$ or 2 lib. butter to a pint of tar. Mr Curl, a man of good sense, and great knowledge in his profession, has used a new kind of salve for his sheep, which promises to be a considerable improvement. Instead of butter, he mixes the oil of the African palm-tree with the tar. Two years ago, he made small experiments of this unguent, and, finding that it answered the purpose, he last year smeared a whole flock with it. The result was, the quantity of wool was $\frac{1}{4}$ more than the best clip the same flock had ever yielded; the quality was more soft and kindly, and, though it was somewhat yellow when clipped, the tar discharged more easily from a part which was washed for a trial, and it became a purer white than common; the palm oil was cheaper per pound than butter, and produced, when melted, $\frac{1}{4}$ more real oil. He is so fully convinced by this, that he has provided as much this year as is sufficient for smearing his whole flocks.

The same gentleman communicated to me a cure for the *scab*, which he and others have found safe and effectual. It was published in the newspapers by Sir Joseph Banks a few years ago; but being a mercurial preparation, against which many people are prejudiced, it was not much attended to, till Mr Graham of Shaw, who had suffered greatly by the loss of sheep in this distemper, ventured to try it; and it has now completely banished the scab from his flock. Having afterwards got an exact copy of the receipt from a friend of Mr Graham's, I here give a transcript of it.

“ Receipt

“ Receipt for curing sheep of the scab, as used by George Graham of Shaw, Esq:
 “ from the prescription of Sir Joseph Banks.

“ Take 1 lib. quicksilver,
 2 lib. hog’s lard,
 $\frac{1}{2}$ lib. Venice turpentine,
 $\frac{1}{2}$ lib. oil or spirit of turpentine :

“ The whole to be beat and mixed together till it be made into an ointment.

“ The parts affected to be rubbed with a small bit, about the size of, or less than,

“ a hazel nut.

“ To prevent a flock of sheep from the infection, rub a few of them, by laying
 “ the ointment on in a stripe, from the neck down the back to the rump ; a
 “ stripe down each hip, and down each shoulder.

“ The above has been applied with safety and efficacy in all seasons, even in the
 “ depth of winter.”

Mr Curl has farms rented in different places, and is possessed of both the long and short sheep. He thinks both kinds have their peculiar properties, which adapt them to different situations. It is his opinion that short sheep are hardiest in wet coarse land; and, particularly, that the new fallen lambs suffer less in bad weather. His loss by the death of short lambs this spring was inconsiderable, compared to what he suffered by the loss of the long. However, he saved many of the long lambs by taking them into an empty house at night, feeding them with cows milk, and joining to their mothers, in an inclosure, early in the morning. The sheep here, in times of heavy snow, are sent to pasture in the lower parts of Annandale, where they are fed at the rate of six-pence or eight pence per score each day. These winter pastures are called *wains*.

The ground by Black Esk toward Hutton church is very grassy ; a great deal of it is soft and wet, producing a variety of coarse herbage. On the summit, short sheep are pastured. At the head of the Driffe, Mr Graham, above mentioned, has an improved flock, raised by his own attention and perseverance. This improvement was begun by crossing with Dishley rams and short ewes. The wool is close, and pretty long : Five fleeces make a little more than a stone of $25\frac{1}{2}$ lib. which sold last year for 13 s. 6 d.

In turning down the Driffe, the sheep pastures are left behind, and the cultivated country appears. After wandering so long through the desert, an involuntary emotion elevates the heart, on beholding cheerful cottages and cultivated fields. On both sides of this little river, the land is cultivated to the top of the nearest eminences. It is mostly let out in moderate farms, from 50 l. to 100 l. of rent. Inclosing, with stone fences and hedges, is going on. Many little plantations of young forest trees, very thriving, have been made. Every farmer has his piece of potatoes, and field cabbages in drills. The culture of turnips in drills is introduced ; the fields are neatly dressed, producing good crops of oats, barley, and pease, pretty early, with some wheat. A number of neat cottages, with little gardens, inhabited by artificers and labourers, are interspersed among

the farms. The farmers, finding their account in encouraging these useful neighbours, liberally accommodate them with bits of ground to plant potatoes, and with horses and ploughs to assist in working it. Every family has a pig or two, which graze by the way sides, &c. in summer, and are fattened on the potatoes, and sold in bacon to Cumberland, from whence it is mostly carried to the London market. This practice has been found so beneficial that it has become universal; and, in the course of 19 years, the value of the bacon exported, from a district of no great extent, in this neighbourhood, has advanced from 500*l.* to 15000*l.*; and this, with their habits of industry and good management, has greatly improved the condition of the cottagers and others, so that the smile of satisfaction and sober contentment seems to rest upon the district.

Here, lime is laid on the turf of the pasture land. Two successive crops of oats are taken; pease, or turnips, cabbages and potatoes in drills, follow; and these are succeeded by barley, on a spring fallow, and the land sown out with grass seeds. Nine pounds of the seeds of red clover, two pounds of white, three bushels of rye grass, with a little rib grass, is generally sown upon an acre. One or two crops of hay are taken, and the land is afterwards pastured for four or more years, so that there shall always be more than half of the farm in grass. A good many milk cows, of the Galloway kind, are kept, and the calves of both sexes reared. When the grass begins to fail, in autumn, the cows are fed with cabbages, and the season of milk thus lengthened out to Christmas. All the hay is consumed by the live stock upon the farm; and the spare bullocks and heifers are sold at two years old.

Sheep are pastured on the high moorish ground around; and the short sheep are preferred as the most proper and profitable stock for the nature of the pastures. Some, who have a portion of moor connected with an arable farm, keep only a flock of hogs, buying weaned lambs at the neighbouring markets, in the month of August, and selling them next year at Stagshawbank, in the beginning of July. But, in some places and seasons, there have been so many carried off by the sickness, or braxie, that this has proved a losing business. William Steuart, Esq; at Hillside, to whom I was recommended, and who showed me the most polite attention, and gave me every kind of information in his power, has a moor pasture, which the former possessor had been obliged to give up on account of these losses. Upon this ground 15 score of hogs used to be pastured. Mr Steuart is a diligent observer; and, perhaps, much of the improvement of the neighbourhood originates in his conduct and example; willing to make an experiment, he stocked it with seven score of hogs and some young neat cattle, to which he gave fodder in a shed, saving a portion, on the lower part of the field, entirely for the hogs, in the spring. His loss by the sickness was only one hog. Next year he pursued the same practice, and put on ten score of hogs, three of which fell by the sickness. This gentleman has preserved a remnant of the stock of sheep imported from Spain, a long time ago by the late Lord Elibank. They are kept on inclosed ground; the pasture is rich and plentiful; the situation high, dry, and airy. There are few of them

them now of the pure breed, but they still retain much of the shape of the Spanish. The thickness and closeness of the fleece is remarkable, weighing, generally, about five pounds avoirdupoise; and the wool, though rather long for carding, is still fine. On the farm of Kirkbank, on the opposite side of the Annan, a few of the same sheep also remain. It is said that their mutton is remarkably good, and yields a rich high flavoured juice at an early age.

SECTION VI.

ON Monday the 15th July, I went from Lockerby to Middleby, to wait on Sir William Maxwell of Springkell, on whom I had been directed to call. Going down the river Annan, the country becomes more low and flat, and mostly capable of cultivation. Much of the soil being of a clayey nature, with a retentive bottom, is rather wet, and few sheep are pastured upon it. Sir William keeps about 120 in inclosed fields. He has found, by experience, that the same sheep grow coarser wool, on this west side of the country, than on the east; and thinks the greater wetness, both in soil and climate, in the first, is the cause of it. Sheep did not thrive in this wet land till Sir William, by the advice of some experienced storemasters, ordered them to be salved. Sir William got a ram of Lord Elibank's stock, to copulate with his ewes from Cheviot. This he finds is a great improvement; the young lambs being thicker covered, and the wool of a superior quality. Of this wool Sir William has had very neat cloth made for his own wearing.

Being now quite out of the sheep country, and the lofty hills of Cumberland immediately before me, I resolved to penetrate a little into that country, not only to examine if any difference took place respecting the kind and management of sheep, but to fulfil the desire of some of the Directors of the Society, who had wished me to make such observations on the practice of Agriculture, in different places, as occurred in my route. I went, therefore, by Gretna Green and Longtoun to Carlisle: From whence I set out by Cockbridge, over the Ellen, to Derwent Lake, and along its side to Kewick. On the 17th, I returned by Penrith to Carlisle, and, fording the Esk, arrived at Annan in the evening. Leaving Annan on the morning of the 18th, I called at Mr Sharp's of Hoddam, breakfasted at Lochmaben, and, crossing the Annan at Johnston church, stopped at Moffat in the afternoon. Here I called for the gentlemen to whom I was recommended, and found Mr Greig, who showed me very great attention, and the day following procured me an interview with the most respectable farmers assembled at the market. Mr Ewart, who is himself a considerable and long experienced storemaster, came also to town, and very obligingly gave me every proper information. The different conversations with these gentlemen, and the time taken up in visiting the woollen manufactures, &c. detained me at Moffat all the 19th.

Towards the Esk, the most part of the soil is a poor barren sand, in some places very moist; but great efforts are making to improve it, by inclosing, planting, and cultivating. Some of the hedges seem to succeed but indifferently. Potatoes and turnips are planted, in drills, with tolerable success. Barley and oats pretty good for the soil, but late, the ear not yet appearing. No material difference appears between the two sides of the Esk about Longtoun; but near Carlisle, the land is divided into small inclosures, with good fences, and well cultivated. This part of Cumberland is much diversified. Much of it consists of moors and mountains, poor of herbage. These are mostly commons, pastured by innumerable flocks of geese, which eat up all the best grass from the sorry sheep intermixed with them. These are the worst looking sheep I had hitherto seen; but this seems to be owing to the pastures being overloaded; for some that were feeding in inclosures at the feet of the mountains were good, well bodied, short sheep, with fleeces considerably finer than some I had lately seen. But, in looking into the report of Mr Readhead and his companions, I find every thing I had observed relating to the sheep of this district accurately stated, and more than I had time to observe. The plains, which are private property, seem to be mostly in small estates, many of them occupied by the proprietors. The inclosures are frequently small and very irregular, surrounded with fences composed of a variety of shrubbery. In this season of the year, when the mountain-ash, the elder, and the hedge-rose, are still in blossom, and the aspiring fox-glove blushing among the thick foliage, these look very gay. All the bottom, along the side of the Derwent Lake, is clothed in this blooming garb, and, with the intermixture of neat villas and cottages, and the fringes of copse-wood, make an appearance truly beautiful and picturesque. It is pleasant to observe with what attention the land is cultivated. Every one is busied in some kind of field labour; and the fair sex seem to be neither less dexterous nor less active than the other. The crops are plentiful. Wheat does not seem to be much cultivated, but, wherever it is, the crop is good. Oats and barley are every where luxuriant, as is the hay from artificial grasses; and, even on very unpromising places, there is good hay from natural grass. This profusion of vegetation indicates that the soil is naturally fertile; but the abundant produce is certainly chiefly owing to the attention of the inhabitants having been so much turned upon cultivating the land, that every piece of improvement is executed effectually, and in proper time; for there is nothing discoverable, either in the soil or climate, superior to many places in Scotland, which are much less productive; and the commons, adjoining to some fertile fields, give little evidence of fertility. About half of the arable land seems to be in tillage. Some part is under a course of summer fallow; white crops are most cultivated; few beans or pease; a good deal of potatoes in drills, very well dressed, and promising good returns; the turnip husbandry is yet in its infancy, but making rapid progress, and will certainly contribute much to the farther improvement of the country. Besides the dung made about the farm, lime is the principal manure, both this fossil and coal being plenty in many parts of the country. The
most

most fashionable form of ridges is veerings of seven or eight feet wide, the furrow of one year becoming the middle of the ridge the next. But, in many places, ridges about 14 feet wide, rounded in the middle, and the situation permanent, are still retained. These are preferred for a moist bottom by some of the farmers, who alledge that the narrow ridges are unnecessary in a dry soil, and ineffectual for the purpose of draining a wet one, the tops of the ridges not being high enough raised above the moisture. But those who have adopted the narrow ridges are decidedly of opinion that these are the best, particularly for all land which has little declivity; and they assert, that ridges which can be ploughed by five times going about with the plough, a good ploughman can always lay them up round enough to throw off the water. Some of the low marshes are drained, the surface pared and burned, and the ashes mixed with lime laid upon them. The cattle of this country are of a large size, and well proportioned, but have ugly horns, very large, and frequently hanging down under the ears.

From the town of Annan, up the river, the bottom is damp, the soil indifferent, and the cultivation negligent. Some of the farm-houses are very good, but the attempts to inclose with hedges feeble and ineffectual. Above Lochmaben the soil is better, and some attempts towards improvement making. The narrow veerings of Cumberland are introduced, and some turnips, cabbages, and potatoes, planted in drills: Some fields of hay, from sown grafs, are very good. Near Moffat, the Vale of Annan becomes narrow, and the country mountainous. The hills are rocky, mostly dry, and covered with a green carpet. The tops of the distant mountains are more moist and coarse.

The woollen manufacture is begun in this neighbourhood, where there is good conveniency of water to drive machinery. Two brothers of the name of Dickson, dyers and clothiers, have a most complete working house. Two fulling mills, of different constructions, are worked by the same water wheel. A stream of water is let into every vat or boiler, where wanted, or stopt, by the pulling of a chord. A machine for raising the wool on flannel and blankets, driven by water, winds the cloth from one beam to another, drawing it over the circumference of a moving wheel, furnished with cards, which performs the work of itself; and thus an office, which costs so much hand labour, is performed with great ease, and to better purpose, without any. A stove for drying wet cloth, which, by means of a simple apparatus, also singes off the rough hairs, is very well contrived. These brothers are mostly employed by manufacturers and householders in the country round. They are very ingenious attentive men, and seem to have been at much pains to make themselves masters of their business. Messrs Irvin and Craig have lately erected a manufacture for teasing, scribbling, carding, and spinning wool. The scribbling and carding machines, which are driven by water, are placed the one on the end of the other, and the wool is handed from the former to the latter. These machines are very efficient, and can prepare a stone of wool for the spinning in less than an hour. Housewives in the neighbourhood get their wool prepared here at 3 s. 6 d. per stone, and the prepared wool is carried away, to be spun at

home. There are flabbing and spinning machines, wrought by the hand; and a good deal of woollen yarn sold to Kendal, &c. Besides which, coarse blanketing, horse clothes, and such other goods, are manufactured. Neither of the proprietors of the works being at home, I did not learn what quantity of wool was annually consumed.

Short sheep are generally kept around Moffat. The weight of the quarters of an ewe from the hill is from 10 to 13 lib. avoirdupoise; the quarters nearly equal. The wool is about five inches in length of staple. About six hog, or eight ewe fleeces, make a stone of $25\frac{1}{2}$ lib. It was sold last year at from 6 s. to 7 s. 6 d. per stone, unwashed; this year about 5 s. It goes mostly to the north of England, and dealers come here and buy it. The farmers are now under the necessity to begin to wash their sheep before shearing, in order to please the wool merchants, who refuse to buy unwashed wool. Rams are frequently changed, which is thought necessary to preserve the figure of the sheep; and regard is had to choose those of the whitest softest fleece, so far as it can be done consistently with the attainment of the figure wished for. Some have pretty numerous flocks, consisting of 2000 and upwards. Some of the farmers have led farms rented, *i. e.* other farms, besides those on which they reside, and on these some portion of the flock is fed; but no accurate classing, according to the age and condition, is observed, excepting that the hogs are kept by themselves. Lambs are weaned about the 15th July, and put for a few days on good pasture which had been saved for them. They are afterwards led to high benty land, where they remain till they are brought to the hog fence for the winter, which is the best sheltered and most grassy part of the farm. Wedders are sold either in lambs or hogs. The rams are admitted to the ewes upon Martinmas day, and to the gimmers 14 days after. The sheep are supposed to be in perfection when they are full mouthed; that is, at four years old. No hay, or other provision, is made for the sheep in winter; but, in great snows, they are conducted to low lands to the southward. Ewes are sold off, at the age of six or seven years, at Michaelmas, for from 6 s. to 7 s. a head, and go mostly to Yorkshire. The best lambs sold, at St. Boswell's, this year about 5 s. per head. The ewes are milked for four or five weeks. Upwards of a fourth part of the lambs died this spring.

The *leaping-ill*, or *trembling*, or, as it is sometimes called here, the *crook*, the name it gets in Yorkshire, prevails in some farms and not in others. It is said to be most frequent where fern abounds; and comes on at two seasons, the end of April and beginning of September. Gun-powder and whisky have been given as a cure, but with no great success.

The *braxy* among hogs is pretty general, and sometimes carries off about a fifth of them. Purges of aloes, and bleeding, are recommended for a cure.

The *sturdy* seems to be uncommonly prevalent. About 3 in 40 are seized with it.

The *breechfeugh*, or *cling*, is also a fatal distemper. For the cure of this, a decoction of elm bark, or boiled milk, is administered.

The

The number of sheep in this large parish may be about 25000. Farmers here much regret the want of inclosures.

The short sheep are here preferred to the long. Some have made experiments of bringing long sheep from Eskdale; but, thinking they did not stand the winter so well as the other, have mostly given them up. Upwards of 20 years ago, Mr Ewart, at the desire of the late Earl of Hopetoun, went to England, and bought a number of Dishley rams from Mr Bakewell, which his Lordship distributed among the farmers on the Annandale estate, in order to improve the breed, and many lambs were begotten by them, with a larger and a finer fleece; but the dealers from Yorkshire showed great dislike to the offspring from this mixture, and declined to purchase them; and, wool being of little value at that time, the storemasters found it necessary to return to the old breed, for which there was always a ready sale.

Among the farmers with whom I conversed in this neighbourhood, there is little difference of opinion respecting the properties of long and short sheep. They say, that on the lower lands, where the climate is moderate and the pasture dry and healthy, long sheep do very well; and, from the superior value of their wool, farmers find their account in keeping them; but that these sheep are not so capable to resist the bad weather and hardships, which occur on the high coarse grounds, as the short; that, from the stillness of their nature, and their reluctance to brave the storm, the former are induced to put up with unwholesome food, which subjects them to the rot and debility in the spring, and hence they are unqualified for nursing their young, which thus suffer as much from the want of milk as from the shortness of their fleece or clothing: I have since heard it remarked, that, when the Cheviot sheep are bred in perfection, the farmers assert, that they are at least equally hardy as the short or black faced, and much more profitable.

SECTION VII.

ON the 20th I left Moffat, and proceeded up the Annan to Errickstone, turning northward to the source of the Tweed, and down that river to Broughton. My horse being lame by improper shoeing, and not finding a place where it could be taken care of till it recovered, I turned off to the west side of Tweeddale for that purpose.

The hill sides about the source of the Annan are dry, and the pasture sweet. The soil of the little plain, by the sides of the stream, seems to be dry and good, well adapted to raising turnip and other winter provision for sheep; yet I was told that turnips would not grow to any size there. But as I observed, a little after, cabbages thriving, in a shepherd's garden on the top of the hill, I suspected this to be the fault of the culture, not of the soil or climate. Upon the summit the pastures are coarse, damp, and benty.

benty. About the source of the Tweed, and for several miles down that river, the ground is soft and wet, and the pasture coarse. The sheep are well bodied, but the fleeces coarse and hairy, and much bedaubed with tar. The rains here are great and frequent; and the three last years have been uncommonly rainy. The rot and spring weakness have been very destructive, carrying off, it is said, one third of the flocks this last spring. No hay, or other winter provision, is made for sheep. Farther down the river the land is dryer, and the pasture better, being an intermixture of short heath, bent, and sweet grasses; but scarcely any appearance of cultivation above the church of Tweedsmoor. In the parish of Glenholm, turnips and hay are begun to be provided for the sheep. The pastures are pretty good, and the wool finer, than at the head of the river. For salving hogs, two lib. of butter is mixed with a pint of tar, and three lib. for ewes. Seven fleeces make a stone of 24 lib. avoirdupoise. The land is healthy, and the loss by the death of sheep moderate. About $\frac{1}{10}$ th of the hogs die of the sickness or braxy. The hills on the west side of the county are mostly dry and green, or rather white, the withered growth of last year giving them that appearance. The bottoms of the hills are cultivated; but, of late years, the frosts in spring and autumn have been injurious to the crops, and greatly discouraged all improvements.

When in this part of the country, I waited on Captain McKay of Scotstoun, who has a fine dry sheep pasture. He has begun to cross his ewes with a Southdown ram; and, under that diligent and spirited improver, it is to be hoped the fairest experiments will be made, how far the quality of wool can be meliorated in this district.

Early on the 22d I returned to the Tweed, and wishing to penetrate into some places where a horse could not travel, I crossed the river near Stanhope, and, walking up the side of it to the foot of the Tala, I went up that stream to the falls. The pastures on the south side of the Tweed are equal to those on the north, dry, sweet, and plentiful, and generally mixed with short heath. The hill sides along the Tala are covered with sweet herbage, the bottoms wet, and over-run with sprot. No draining has here been attempted. Towards the head of the stream, the hills on both sides become exceeding steep, and the sides scared, in many places, with fragments of the rock tumbling down. The verdure is sweet and short. The plain between is a neglected morass, on which a few black cattle pasture. The falls of Tala are a continuation of cataracts, falling among the rifted rocks of a craggy mountain. Here the pleasant verdure ceases, and gloomy coarse herbage succeeds. I climbed up this mountain, sinking almost every step to the top of the shoes, and, after much labour gaining the summit, got a view of Lochiskeen. Here desolation reigns uncontrolled! Nothing can be more dismal than the prospect which now opens! Immediately below lies the lake, still and black as Acheron. To the right a perpendicular rock rises to a tremendous height, with its surface covered with hoary lichen. Large fragments fallen from this rock, and their interstices filled with spongy peat earth, form the right bank of the lake. The left is a flat covered with a deep body of soft peat earth, almost naked. The sweet view of the distant banks

of Moffat water, forms a strong contrast with these gloomy scenes, and is the only agreeable part of the prospect. Walking down the right side of the lake to the Grey Mare's Tail, and back by the opposite side, I reached the head of Winter burn, and, going down the side of that brook, took up my lodging in a shepherd's hut near the foot of it. All around the lake, the water is every where sweating out on the surface, and nothing but the coarsest herbage is produced. The *viola palustris*, and other such plants as are said to give sheep the rot, are frequent. It is probably for this reason that the neighbouring shepherds keep their sheep on these spongy heights only for a part of the months of July and August, when there is some growth of more wholesome herbage, allowing them to fall gradually down on better pasture as the days shorten. The older and stronger ewes are separated from the young and weaker ewes, and the former only kept on these heights. Few wedder stocks are kept here. The spare lambs are either sold fat or for keeping, and only as many retained as are necessary for keeping up the breeding stock. The braxy is not very frequent; from 1 to 2 in 20 of the hogs are seized with it. The sides of the hills along Winter burn are tolerably good pasture, but always wet and full of spret towards the bottom.

From Winter burn I proceeded to Meggit water, and down it, till I was within sight of St. Mary's Loch. I then crossed the mountains to the head of Manor water, and went down the course of it to Poffo. From thence I went over a ridge of hills to the side of the Tweed, and waited on Sir James Nasmyth at New Poffo on the evening of the 23d.

Along Meggit water the pasture is much diversified, and pretty plentiful. Between this and Manor water, the flat top of the ridge is covered with a thick body of soft peat earth, yielding little useful herbage. Several conical summits are interspersed, the surface of which is firm and dry, producing a mixture of heath and fine grass; but vegetation here is very late. On the tops of many of these summits, rude obelisks are erected, to direct the wandering shepherds in the time of thick fogs, which are very frequent among those mountains. Along the sides of the Manor, the hills are very steep, the naked rock frequently appearing; but the soil is generally dry, and the herbage sweet. On the ridge between Poffo and the Tweed, the soil is dry, and heath is prevalent.

On the 24th I visited some of the farms in the neighbourhood, and on the 25th went down the Tweed, by Peebles, Innerliething, Traquair, &c.

All along the Tweed, so far as the eye can reach, the hill pastures are of a fine quality. The soil is dry, and covered with a mixture of heath and sweet herbage. In going down the river, the hills recede, and the plains become more extensive. Some of these are now neatly cultivated, and producing plentifully both white and green crops. From the dryness of the soil, the fine quality of the pasture, the great variety of natural shelters, and the opportunities of making winter provision for the flock, one would

think that no inland pastures could be better adapted than these to the feeding of fine woolled sheep.

On the 26th, I took leave of the magnificent river Tweed, the banks of which I had now explored almost every where, from its source to its estuary; and, traversing some of the pastures in the neighbourhood of Linton, Biggar, &c. I arrived at Hamilton on the evening of the 27th.

The sheep of Peebles-shire are generally of the short kind, and have always been much of the same sort, so far as any tradition of sheep pasturing can be traced. These sheep are considered so much to be the natives of this district, that it is now become fashionable to call them *the Linton breed*. This is, however, but a vague definition, as sheep from all the different moors of the south-west of Scotland are brought for sale to the Linton markets. Nevertheless, it seems probable that this kind of sheep are the earliest natives of the high stormy inland pastures, where the pastoral employment has long been followed, and that the difference observable among them arises from the difference of soil, climate, and other circumstances in which they have been placed. A sensible difference of appearance may be observed between the individuals of the same flock, as well as between the flocks of different farms. Some flocks are larger boned, some better bodied, than others; and it is not uncommon to find the best bodied sheep bearing the coarsest fleece. Nevertheless, it is universally admitted by all candid storemasters, that a fine close woolled sheep is as hardy and as healthy as a coarse hairy one, and feeds sooner and better. The stoutest sheep are generally found on those pastures which are somewhat of a coarse quality. The cause probably is, that the coarse bent herbage stands the weather, and yields the sheep a regular sustenance in winter, when finer grass fails. The reasons which the holders of short sheep give for their preference of this kind are, that they make the best lambs; that their spare stock has always the readiest sale, as being allowed to feed to a good size when arrived at a proper age; and that the quality of the mutton is much esteemed. The ewes are at perfection at five years old, and are generally sold at six or seven, at Michaelmas, from 7 s. to 9 s. 6 d. per head; wedder hogs from 10 s. to 11 s.; lambs of the best sort at 5 s. the worst at 2 s. The quarters of an ewe, from the hill, weigh about 10 lib.; but, by abundant feeding, it is said they have been known to rise to 18 lib. and the tallow 18 lib.; and the quarters of an old wedder to 21 lib.

The fleece is often marked with blue or grey spots. The length of the staple is from four to five inches. From ten to six fleeces make a stone of 24 lib. The price of the shearing 1792, was from 5 s. to 8 s. per stone. The shearing 1793 was all sold, but the price not finally adjusted. Some wash their sheep before shearing, others do not.

Mr Brody has built a large commodious house, for manufacturing woollen cloth, at Innerlicthing, where there is a good water fall, and erected the necessary machinery for preparing wool and fulling cloth. Here good substantial coarse cloths are manufactured;

but,

but, as the manufacture is yet in its infancy, it is not known how much wool it will consume.

Several people, in this district, have made attempts to improve the wool, by selecting rams for breeders of the whitest softest fleece; but the most shaggy coarse woolled sheep having the readiest sale, there is no encouragement to pursue such experiments with the perseverance and attention necessary to ensure success. Some gentlemen have got long sheep from Cheviot to their inclosures; but it does not seem yet to be well ascertained how they will succeed. There are instances, also, of some farmers having tried a few of the same kind; but, thinking that these did not stand the winter so well as their own, they have mostly parted with them. However, a mixture of the long sheep is gradually creeping in to this county. They have been brought up the Tweed from the lower parts of Melkirkshire, and may now be seen along the sides of the river, as far up as Traquair. They are said to do very well. They weigh about 11 lib. per quarter. The length of the wool is about four inches. Six and one-half fleeces make a stone; which sold last year at 16 s. washed wool. But this mixture seems to have been introduced in a very slovenly manner, without paying proper attention to select the breeders of either sex, so that they are a motly race, between the long and short sheep, many of them destitute of the proper characteristics of either kind, and, it is to be doubted, will be of little value. Nevertheless, were any person to arise, disposed to persevere in that ancient breeding which has been paid in other parts, and described in the former sections of this Report, a kind of sheep, valuable both in fleece and carcase, might certainly be produced in those fine pastures.

Several of the land proprietors of this county have begun to inclose the pastures with stone walls. As this practice extends, it will certainly be a great improvement in the pasturing of sheep.

All the sheep are grossly smeared with tar; and it is always the practice to lay the greatest quantity on those which are intended for sale. The hogs are laid about the middle of October. The most common mixture for them is 12 pints tar and 20 lib. butter; with which quantity 60 ewes, or 40 wedder hogs, are salved. The old ewes are salved about 10 days latter: For them the mixture is 12 pints tar to 28 lib. butter; and this serves for 80 or 90. Some now begin to salve lighter, and with a greater admixture of butter; and almost all agree, that laying on so great a quantity of tar is not only unnecessary, but injurious; and say, that it is only done in compliance with the barbarous prejudice of the dealers who purchase sheep. They acknowledge that strong tarring makes a sheep sick, and takes the flesh off the fattest before it recovers. What a pity that so gross an absurdity cannot be flamed out of practice!

The practices of sheep farming are very various, almost every farmer following his own opinion, and thinking it the best. To recount a number of these, would only be repeating nearly what has been already said. Few keep widders longer than the first year. Gimmers generally get the ram about 14 days after the older ewes. Little attention

tention is paid to sheep during the winter, except conducting them to fells, and places of safety, in times of snow. Lambs are weaned about the middle of July, and put on clean good grafs for a fortnight: After which, they are sent to high heathy ground for a month; from whence they are brought to grafs, saved for six weeks, where they go till the time of falving; and then they are put upon low rough pasture for the winter, which is called *the hog fence*. Ewes are milked six weeks. Some have tried to give young rams, for breeding, the most abundant pasture they could procure them, and have found that this tends greatly to improve the stock.

The *sickness* or *braxy* is more or less prevalent in different places, and carries off from 1 to 3 in 20.

The *breechfeugh* or *cling* is not frequent, but, when the infection gets in, very troublesome, and occasions considerable loss.

The *pinning* is here called the *heather-ill*.

The *scab* and *foot-rot* are very little known.

The *rot*, as has been already said, has prevailed in some parts of the country, but is not very general.

The *blue sickness*, or *weakness in the spring*, is the worst disease, and has been very hurtful this last spring. The bad lambing time also occasioned great loss. Almost all the gimmers lambs died, and, altogether, not less than a third of the whole were lost.

SECTION VIII.

On the 6th of August I again left Hamilton, passing through the parishes of Lesmahagow and Douglas; from thence to Moorkirk, Old and New Cumnock, and Dalmelington; and having visited several of the pastures of Kyle and Carrick, I went along the shore, by Glennap, to Stranraer, and crossing the moors from thence, I arrived at Stonickirk on the evening of Saturday the 10th.

The sheep pastures of Lesmahagow are not very extensive. They are in the same range of hills with those of Douglas and Moorkirk, and may be considered as a part of the same district. The pastures of Douglas and Moorkirk are an assemblage of hills of a moderate height. Here the free-stone, there the whin rock, appears. On the former, the surface is generally moist, and the pasture long and coarse; on the latter, the hill sides are steep and dry, covered with a mixture of sweet short grafs and heath: The hollows or cavities are mostly peat earth, producing either stool bent or deer hair. About Moorkirk, an uncommon confusion of the mineral strata is observable, and the surface productions are proportionally diversified. Large flat tracts of peat earth sometimes occur, very moist, and yielding little useful herbage. Towards Old Cumnock, the land is mostly occupied in tillage, and feeding neat cattle. Between Old and New Cumnock, ineffectual attempts to inclose the moorish ground with hedge and ditch have

have banished the sheep. The hills of New Cumnock are mostly white, *i. e.* bearing a mixture of bent, stool bent, sheep's fisque, &c. without heath. Probably the excess of the winter's moisture is injurious to the roots of that plant. It is not uncommon to find the *trifolium repens* branching among the other herbage, and tormentil abounds in some places. Here and there tracts covered almost wholly with spret occur. All the flat lands are cultivated. Between New Cumnock and Dalmellington, sometimes the blue, sometimes the red, basaltic rock appears; by and by free-stone and lime, with symptoms of coal and iron. On the dry eminences is a mixture of short heath and sweet herbage; on the hollows the pasture is more rank and coarse. From Dalmellington towards Straiton the red rock prevails, and the pastures are short and fine, sometimes with a mixture of heath, and sometimes green, except some hollows, either occupied by spret bogs or peat earth. On these flats a plant, not to be found on the eastern moors, prevails, *viz.* gall, (*myrica gale*); but it does not seem to be eaten by sheep, and therefore can have no effect upon them. Some say that it is the cause of a disease among black cattle, not uncommon in some parts of Galloway, called the *cratouch*, which attacks the feet and limbs, and disables them from travelling. But, it is perhaps doubtful whether the disease is occasioned by this plant or not. For my own part, I was not satisfied that the cattle ever touched it, though I took every opportunity of observing. The pastures in the parishes of Straiton and Bar resemble those we have been describing, becoming wetter and coarser on the heights towards the sources of the rivers. From Straiton, down the vale of Girvan, and all along the coast, by Glennap to Stranraer, it is impossible to imagine a situation, in this country, better adapted to the pasturing of sheep, and the growth of fine wool, so far as pasture and climate can have effect. The soil is dry, the pasture neat, sweet, and finely diversified; the rains, though frequent, seldom continue long; the sea air quickly melts the snow; the hills are of a moderate height, and abound in natural shelters; and there are always fertile plains at hand to yield winter provision for the flocks. The moors lying between Stranraer and Portpatrick, and towards Stonie Kirk, though consisting of low hills, are very rugged, with strong heath growing upon a thin bed of peat earth over a firm gravelly ground. The inhabitants here, who are much more numerous than in the eastern moors, not satisfied with the indolence of a pastoral life, are making bold encroachments on the desert, in spite of every disadvantage. A hut is built of fods, in which a man of humanity would scarcely lodge his head. In this the little husbandman, his family, and his scanty stock of black cattle, are packed; and thus accommodated, by paring and burning the moorish soil, their sustenance is procured, and the gloomy heath converted into verdant fields.

Through all this tract the rains are heavy and frequent; but it is only in the inland parts of the country that the snow lies long. Near the coast, the shepherd is scarce ever in any dread of its effects. Though the country is hilly, and the elevation considerable, it seems to be far inferior to that of those more inland heights, where the

counties of Dumfries, Selkirk, Peebles, and Lanark, bound with one another; so that, though it feels the first effects of every blast from the western ocean, the cold must be less severe. But it is not on sheep alone that the storemasters depend. Black cattle, wherever they can be accommodated with food, are thought to be fully as advantageous; and the industry of the country, consequently, is much turned upon making a proper provision for these. In Kyle and Carrick, many stone walls are raised, that the grounds may be properly separated, and the pastures adapted to the different kinds of stock, at different seasons. One wall, called the *head dike*, is reckoned a great convenience in a sheep farm. This is a wall running across the face of the hill, so as to divide the summit from the lower grounds. This restrains the sheep upon the heights during the fine weather in the summer months; and the ground below the *dike* being sowed, or lightly stocked, affords a good relief to the hill sheep upon the approach of winter. Where such conveniencies are wanting, the deficiency is made up by tending the sheep on the heights in summer, and keeping the lower ground as easy as possible. A division, on the lowest best ground, for the hogs in winter, is held indispensable. When the farm on which the sheep are bred is in the most bleak and stormy parts of the country, and does not afford a proper winter pasture for young sheep, a hog fence is provided on lower ground, sometimes at several miles distant, which, whether it be held by lease, or rented for a year, now cost the storemaster from 1 s. 6 d. to 2 s. for each hog's pasture. These are very little eaten after Whitsunday, and left entirely untouched after Lammas, till the time of salving, when the hogs are put upon them.

The sheep are very different. In the inland pastures of Douglas and Moorkirk, they have the same general appearance with the short sheep of other high inland moors. In going westward, a change gradually takes place. At first one observes a kind of mixture, and finally almost a total change. The native sheep of the west coast cannot be properly called black faced. Their faces, indeed, and legs, are generally sprinkled with black or brown spots upon a white or a cream coloured ground; the horns are more slender than those of the inland short sheep, and more of them are without horns; their wool is softer and shorter, at least, by its disposition to curl, and lying close over the body, without shedding in locks, it appears so. They seem to be of a more slender make, the legs long and small, and the tail somewhat larger than that of short sheep; but this, probably, is much owing to the wool clapping close to the body, and the legs being destitute of wool to the hocks; for in the shorn sheep the difference of shape was not so striking. However, they are still of a slender shape; and the greatest fault is, that many of them are thin and low shouldered; but very handsome individuals may be found among them. The sheep in the pastures between Moorkirk and the shore, seem to be of a middle nature between the short sheep and the sheep of the coast. Their wool is full topped, and has that tendency to lie close round the body, when they are not mixed with the shaggy short sheep. These native sheep are called by the shepherds *ful woolled* sheep, to distinguish them from the other. It is the universal testi-

mony that these *fat woolled* sheep are the most healthy; that they are the most hardy, and stand the storms of winter best; and that they become soonest fat in summer. The mutton is acknowledged to be exquisite; the fibres small, and the juices rich. A wether at $3\frac{1}{2}$ years old, the time they are generally sold off, weighs from 10 to 12 lib. avoirdupoise, per quarter; tallow about 8 lib. An ewe weighs from a pound to a pound and a half per quarter lighter. The Hon. Admiral Stuart has some Cheviot sheep, from Blindburn, in Northumberland, which the overseer thinks are doing very well. He kept the ewes, in the spring, on low good pasture, and had little loss of lambs. The Rev. Mr Young, minister of Bar, has also a few of the long sheep, of which there are good accounts. He sold his wool at 15 s. per stone. It was resolved by many of the farmers near the shore of Carrick, who sell their sheep fat, to make a general attempt to improve their wool, if the failure of the trade and credit of the country had not discouraged them.

The wool is of different qualities. That of the short sheep has been repeatedly described. From New Cumnock, westward, the general testimony is, that the fleece has a tendency to improve in quality, if it were not counteracted by crossing with coarse woolled rams, in order to procure a breed adapted to the run of the markets for rough (unhorn) sheep *. The nearer the shore, the pasture being finer, the wool is also finer and shorter. The length of the staple is, in the inland parts, six or seven inches; on the shore about four. From six to seven fleeces, of all ages, make a stone. The wool is not washed before shearing; but, to make up for the want of it, a stone is given *gratis* to every pack of 12 stones. The price last year was from 4 s. 6 d. to 8 s. per stone in the inland parts, and on the shore from 10 s. to 11 s. Ayrshire weight, which is 24 lib. avoirdupoise to the stone.

Salving is general; and, in the central parts of the country, the tar is very grossly laid on, and with very little mixture of butter. More to the west, the rule is two pounds of butter to a pint of tar. Some, to a pint of tar, give a pint of melted butter, which is equal to $2\frac{1}{2}$ lib. Ayrshire weight, being 24 oz. avoirdupoise to the pound. On account of cheapness, some use about a fourth or fifth part of fish oil instead of butter. Sulphur has been mixed with the salve, as a cure and preventive of the scab, with success.

* I cannot explain this so well as by giving a short extract from a letter which I received from a gentleman of that country, who is a very intelligent and long experienced store-master.—“But breed from them (the shaggy Tweedsmoor rams) we must,” says he, “They are universally the *ton*; and none else will sell in a rough sheep market. The Highland sheep, too, now cut us out of the market, for mutton, at home; and we have no alternative but to drive to Stagshaw, in the month of June, where no other sort of sheep will sell. In consequence of this, our wool is much coarser than formerly; but the weight of our sheep is increased a few pounds, which pleases some people vastly. It is not clear to me, however, that this is any advantage, as we often see the smaller breed hardier than the larger: And, if the same grass will feed ten sheep, hardier, of finer wool, and carrying as much mutton, of a better quality, as eight larger ones of the hairy breed, Why should not the ten be preferred?”—Again, “Thus hair in place of wool, the black face, neck, and tail, continue to be our standards of perfection”

cefs. A large handful of the flower, for every pint of tar, is stirred, and fully incorporated, into the mixture while it is warm, and has been found to be perfectly safe and effectual. The reasons given for salving are the same as have been already stated from other places, viz. that it destroys vermin, tends to prevent the scab, hinders the snow from lodging on the back of the animal, keeps it warm, by defending it from the wet and damp, and increases the quantity and meliorates the quality of the wool. I met only with one instance of a person who had been hardy enough to make a fair experiment of omitting this practice, in the high moor country. One season he salved none of his flock but the hogs: The result was, that, though his land is wet, and the winter happened to be a rainy one, he could not observe that the sheep were in any degree injured; but the wool was more hairy and padded, and the quantity somewhat less. He sold it, with difficulty, at 1 s. per stone higher than the salved wool, which nearly made up for the want of weight. His opinion is, that salving encourages the growth of wool, and that it would have been dangerous to have pursued the experiment another year, as the fleece, which defends the sheep from the cold, would have been thereby diminished, but that, if it would tend to any good purpose, salving might be safely omitted every second year. Admiral Stuart's overseer at Moorkirk salves his sheep, but very lightly. His mixture is equal to six pounds, Ayrshire weight, of butter to a pint of tar. He thinks his sheep are in better order than the heavy tarred ones, and the wool greatly preferable. But whether his sheep be better fed, and better tended, than is done in the moors in general, is the question.

Unthorn sheep are sold in the spring at Kilbride, Linton, House of the Moor, &c. or are driven to England, and sold at Stagshaw or Appleby. Fat sheep and lambs are sold to Glasgow, Paisley, Ayr, Kilmarnock, &c. Stock lambs are sold at Lanark, Moorkirk, and Auchinleck. Those who keep a wedder flock, sell them either in dunmouts or three years olds. Ewes are sold, at five years old, at 7 s. or 8 s. per head; wedders about 11 s.; dunmouts at 9 s.; best lambs about 5 s. Wool is sold to the Kilmarnock manufacturers, or to dealers who reside in different parts of the country, or carried to be sold at the fairs in the country around. The price is about 15 *per cent.* lower this year than the last.

There are few of the moor pastures of which three acres will do more than graze two sheep; and, where peat mosses abound, it will require more than twice as much. The rent, per head, is from 1 s. to 2 s. 6 d. according to the quality of the pasture.

Dividing the flocks into different classes is not very common in this country. For the most part, sheep of all kinds and ages go promiscuously, except the hogs, in winter, as has been already mentioned. Some wean the lambs about the 1st of August; others delay till the day before Auchinleck fair, which is on the last Tuesday of the month; and it is the custom with some to let them continue to suck till, the milk being dried, the dams themselves dismilk them. These, after the first winter is over, are said to be the hardiest sheep. The weaned lambs are reared on saved grass for two or

three

three weeks, till they forget their mothers, and then return to the rest of the flock. Ewes get the ram from the 18th to the 28th of November, the gimmers ten days or a fortnight later than the older ewes. Ewes are not milked. When the weaning has been early, the milk sometimes kills a few.

Few farmers have any winter provision for their flocks. When the snow is so deep that sheep cannot live upon the farm, they are carried to lower ground, or nearer the sea. As every farmer keeps a great many neat cattle, for which winter fodder must be provided, some, who are more than ordinarily provident in laying in a good stock, give the sheep a share in times of strait. Hay made of the *bolcus lanatus*, the seeds of which are frequently sown in the county of Ayr for that purpose, is thought the best sheep's fodder. It is either laid down on the snow, or put into flakes; and the sheep being divided into companies, after the first are satisfied the next succeed, till the whole have got their dole. Farmers, who have practised this, think it both a better and a cheaper way of bringing sheep through a hard winter than driving them to low ground. Some few people have begun to cultivate turnips; but they are not yet so plenty as to come to the share of the sheep.

The time of gestation being generally about 150 days, the ewes begin to lamb soon after the middle of April. All the care bestowed on them and their young is, that the shepherd gives more constant attendance. He carries a bottle of cows milk along with him, to give a little, from his mouth, to support a fainting lamb which has been deserted by its mother, who frequently from weakness, and want of milk,

—“*filice in nuda conuina reliquit,*”

till he can find a ewe, without a lamb, to nurse it; and does what he can to prevent accidents, and make the best of them when they happen, by confining a forsaken lamb with a ewe which has lost her own till they are reconciled to each other, which generally happens in ten or twelve hours.

The *rot*, and *debility in the spring*, are the most fatal diseases. The rot is attributed to overstocking, to wet stormy winters, to changeable weather, in the spring, occasioning frequent new growths of grass, and to the eating of grass which has been flooded by torrents. No successful remedy for it has been found. Weakness is brought on by the same causes, and has, this last year, proved a heavy loss to the storemasters. The long continued rains have been more injurious than any frost and snow which has happened since the year 1740.

The *braxy* prevails less or more in different places. Two kinds of that disease are mentioned, the *windy* and the *watery*. The windy is sometimes removed by giving the patient milk and a little ardent spirits. The watery is scarce ever cured. The shepherds, and others, are very fond of the flesh of sheep which die of this disease; and it is remarked that braxy eaters are generally strong, healthy, long lived people. The sturdy

is sometimes cured by opening the skull, and taking out the bag of water; but many die soon after the operation.

The *cling*, or *diarrhœa*, is sometimes very fatal. This disease, on grounds where the sheep are subject to the rot, is not only dreaded on its own account, but as a sure fore-runner of the latter. The only remedy used is removing the sheep affected to different pasture, and bleeding them in the tail.

The *pinning* is here called the *vanquish*. It is contracted by sheep which take their haunts on the tops of the hills, and is cured by bringing the patients to low good pasture, where none thrive better.

The *trembling* has been introduced by bringing rams from Tweeddale, Annandale, &c. but is not yet very frequent or hurtful. The braxy is also said to be more frequent since it became the custom to cross with these rams; and it is observed that the rams themselves fall off much in appearance after a years residence in this west country.

From one half to one third of the young lambs, in these moors, died this spring. The loss of hogs, by braxy and sturdy, is computed, on an average, at 15 *per cent.*; that of older sheep, by different diseases and accidents, not much less.

It ought here to be observed, that it is the opinion of all the storemasters with whom I conversed, that sheep which are in good habit, and have plentiful pasture, have not only the greatest quantity, but the best quality of wool.

At Dalmellington, Messrs Wight and Co. four decent attentive men, have erected a manufacture of coarse woollen goods. Having the opportunity of a convenient water-fall, and some houses which had been erected for other purposes, with a stock of 500*l.* they have mounted a teasing, a scribbling, and two carding machines, driven by water. Two or three girls keep these machines at work. A flabbing, and six spinning jeannies, work up the carded wool. A man and five children are employed at the flabbing, and six women work the spinning jeannies. About 14 looms are employed; and thus about 120 packs, annually, of the wool of the country is wrought up into blanketting, and other goods, from 7½ *d.* to 2 *s.* 6 *d.* per yard, which is sold, partly rough, and partly dressed, to Kilmarnock, Glasgow, &c.

At Straiton there are a number of woollen weavers, who either buy the yarn which they manufacture from the women of the country, or wool, which they employ women to spin, and make plaidings, ferges, &c. which are sold at the neighbouring fairs.

Mr Allan Morrison has erected machinery for the woollen manufacture at the head of the Bay of Lochryan, and now manufactures at the rate of 100 packs annually.

SECTION

SECTION IX.

FROM Stoniekirk I rode to the head of the Bay of Luce, and along to Glenluce, Old and New, called on Captain Dalrymple of Dunragget and Mr Heron of Chippermore, and after visiting several of the farms on that side of the peninsula, went by Glaslerton and Whithorn. From thence I went by Wigton and Penningham, and arrived at Newtontewart on Wednesday evening the 14th August.

This peninsula, in general, is low land, and the greatest eminences are not of a considerable height. But, though the elevation is moderate, the surface is exceedingly rugged and unequal, and the points of naked rocks, or fragments detached from them, frequently appear. The western side, almost all along the bay, has a bold shore. The soil seems to be of a fertile quality, and, aided by the mild influence of the sea air, the reproduction of grass must be quick, and the vegetation long continued. The verdure is very close and rich. The pastures are interspersed with whins or furze (*ullex*). Of this shrub there are two species or varieties here, viz. that which is most common in other parts of Scotland, and flowers in April, when the state of the weather will permit; the other is smaller in the growth, and flowers in August. Fern abounds in some places. Sometimes there is a mixture of heath among the green herbage, and sometimes a close carpet of the best grasses, here and there diversified with tufts of sheep's fescue and fine bent. Leaving the shore, the pasture becomes still more diversified. The sides of the eminences, and all dry places, are covered with a close mixture of heath, bent, and grasses, the fox glove growing every where on the sides of the hills. The hollows have a thin bed of soft peat earth, producing the different kinds of coarse herbage congenial to that soil. Small lakes and morasses occupy some of the larger hollows. Sometimes the rock disappears, and an argillaceous under stratum makes the surface wet and the pasture coarse.

Almost all the land is inclosed and subdivided with rough stone walls. The plain ground is manured with sea mud, shells, marl, or lime, from Cumberland, well cultivated, and producing plentiful crops of corn and grass. A good many potatoes are planted, and promising well. The wild or grey oats are not yet entirely given up. The barley harvest was begun near Wigton on the 14th. The pastures are partly grazed by sheep, and partly by black cattle; a farmer who has 30 score of the former keeping commonly about six score of the latter.

This is the country of the fine Galloway wool, formerly in so much reputation. The sheep much resemble the shore sheep last described, but the wool is still shorter and finer, and perhaps there are more of them quite white faced. The size is nearly the same. The limbs are slender, and the shoulders generally thin. They are remarkably quiet and placid. Not harraressed with shepherds and dogs, they are so little disposed to take alarm, that one may walk or ride among them without giving them the least disturb-

ance. They are said to be much disposed to fatten, and the mutton of the best quality.

The wool is of a shining white, exceedingly soft and beautiful, on the fore part of the body. The breech wool, which is about a fourth of the fleece, is a good deal coarser. The fineness of the fleece seems to be occasioned solely by the soil and climate, not by any culture or management; for the general testimony is, that the fleece of any sheep improves by feeding on these shores, and that the fleece of the shore sheep grows worse when they are carried to coarse inland pastures. No attention has been paid to preserve or improve the breed of these fine woolled sheep. On the contrary, it is not uncommon to cover the ewes with rough woolled rams, of the short kind, from Monigaff; so that the finest wool is now only to be found on those farms, the possessors of which, from indolence, or aversion to novelty, have avoided this practice. But it is not likely they will refrain from it long, if crossing the breed, by increasing the carcase and the quantity of the fleece, shall really be found to yield more profit; for they make no advantage by the superior quality of their wool. The very finest is sold this year at 13 s. per stone, and that which is, intrinsically, at least one fourth worse, no lower. The stone is 26 lib. avoirdupoise. It is the opinion of some intelligent storemasters, that, by a strict attention to select the finest fleeced of both sexes for breeders, for a few generations, they might bring their wool to a quality, perhaps, inferior to none produced in the island. But, for want of the incitement of prices adequate to the quality, nothing of this kind is attended to. The sheep are allowed to copulate at random, without regard to shape, fleece, or degrees of kindred: And it is probable that the figure, and constitution of the animal, may be as much injured as the fleece, by this neglect. I met only with one gentleman, Mr Heron of Chippermere, who was desirous of making some improvement. He has already had some of his ewes covered with a Spanish ram, and the fleeces of the offspring, though, perhaps, not a great deal finer than his own, are considerably closer. He wished me to procure him a fine woolled Spanish ram; but, when I attempted, I found so many difficulties in the way that I could not accomplish it. Admiral Stewart has got a variety of different kinds of sheep, on excellent pasture along the shore, at Glasferton; but, as I did not find Mr Palliser, his manager, at home, I shall refer the Society to him for an account of their success.

Sheep, lambs, and wool, are for the most part sold at home to butchers, jobbers, and dealers. The wool goes mostly to Kendal or Kilmarnock. From eight to twelve fleeces make a stone. The lambs, on some farms, are shorn along with their dams, and the wool sold to the hat manufacturers of Cumberland. It is computed, that about 500 l. worth has gone from Galloway this year.

The custom of salving sheep is but recent in Galloway; and there are still many farms, near the shore, where it is not practised. Some salve the hogs only; but on pastures inclined to be wet the whole are salved. Three pounds of butter, mixed with a pint of tar, serves for 18 sheep. There are only five sheds made over the body; one along the back,

back, and two on each side. Along each of these the salve is poured warm, from the pipe of an old tea pot, the great grate of which has been previously broken out, or from a tin pot, made for the purpose after the same manner. Thus the liquid ointment runs along the skin till what is poured into one shed meets that which has been put into another, and completely cures the animal without befouling the wool. This manner of salving is a late improvement, and is not yet become general. It is minutely described (in a book intitled, “A Treatise on Pasturage,” printed at Edinburgh 1790, the author of which is said to be of this country), with some difference from what was represented to me with respect to the sheds. Having been informed that this author was connected with some of the most considerable storemasters of the country, I was desirous to get a sight of the book, and soon after got a present of it from The Hon. Mr Gordon of Kenmore: But I was greatly disappointed in the perusal; for the writer is so much taken up with the fabulous and heroick times, that he is obliged to refer the reader to old women for the regimen and cure of the diseases of cattle in our degenerate days.

The sheep stocks of the farmers here are from 200 to 1000. All kinds generally go promiscuously, except the hogs in winter, which are managed differently by different people. In summer the flocks are confined on the rugged unequal ground which is unfit for tillage; and after harvest they are allowed to range over the cultivated lands. In the storms of winter they resort much to the shore, when they have that opportunity, and find great support on the furze which grow near the coast. Some wean the lambs about the end of July or beginning of August, and some leave it to the dams to wean them. One acre on some of the pastures, especially those upon the coast, is sufficient to graze two sheep; but on some of the most inland, where the land is wet and mossy, it requires three acres to graze one. The rent is from 2 s. to 2 s. 6 d. a head.

This is a healthy sheep country, if it were not for the braxy among the hogs, which in some places is very fatal. It prevails most where fern abounds, and sometimes carries off one fourth. The hogs which are not weaned, but go with their mothers, are least subject to it. The best palliative is change of pasture, and some also recommend early salving. It is believed to be occasioned by eating the hard, dry, indigestible grasses in October, which had been rejected in summer. Those grasses, when shown to me, I found to be no other than the sheeps fescue and fine bent. But however this may be, one remarkable fact was told me by a gentleman who keeps a small flock. About 20 years ago, when he entered upon the possession of the land, it abounded with white dry sharp pointed grass, and no part of the neighbourhood was more afflicted with the braxy: But in a long course of unremitted industry, by cultivating and repeated top dressing with composts of lime, &c. he has banished this white grass, and covered the fields with white clover and other sweet herbage. He still keeps a flock of sheep, and puts the hogs on the cultivated pasture, and now never loses one by the braxy.

There are a few instances of the *sturdy*; but the cure of it is scarcely ever attempted.

A disease is mentioned, which seems to be the same with the leaping ill, or trembling. It goes by the different names of *drawing*, *griping*, and *flaggers*, and occurs but seldom.

The *rot* is little known, nor does an epidemical diarrhoea seem ever to occur. A casual looseness sometimes happens, but seldom endangers the life of the patient.

The *vanquish* is known, and is cured the same way as in other places.

An affliction which befalls sheep every where, and has hitherto been omitted to be mentioned, is not unfrequent along this shore. In the warm season, swarms of different kinds of flies, eager to deposit their spawns, hover round the sheep. When these meet with any part where the skin has been broken, or where dirt adheres to the fleece, numbers of the eggs are lodged there. As soon as the maggots are hatched, they eat their way into the body of the animal, and, unless it be prevented, sometimes occasion its death. For this some rub the part well with moist earth; and peat earth is reckoned the best. Some apply salted butter. A plaster of coal tar is said to be very good; and bathing the part with sugar of lead dissolved in water is an effectual remedy.

The fleece or clothing of the young lambs, on this coast, is rather defective, and the inclemency of the weather this spring destroyed great numbers of them: In some places almost the half.

Messrs M^cGill and Sloan, and Dr Malcolm, have erected machinery for the woollen manufacture, upon the side of the Cree, opposite to Newtonstewart. They have laid out about 500 l. in houses and machinery, which are not yet quite finished. They propose to sell part of the woollen yarn, and work up a part into cloth; and consume at present at the rate of 140 packs of wool *per annum*.

SECTION X.

ON the 15th I left the county of Galloway, and from thence to the 22d inclusive, traversed a considerable part of the stewartry of Kirkcudbright, and that part of the county of Dumfries which borders with it. The weather was now become very rainy. Almost every day there was a new deluge, and I was frequently stopt and turned round by the brooks being overflowed. Most of the people, too, on whom I was appointed to call, I had the misfortune not to find at home: But those whom I did find, viz. The Hon. Mr Gordon of Kenmore, Mr Steuart of Cairnsmoor, and Captain Newal of Waterside, shewed an earnest desire to promote the views of the Society, and with great civility gave me every kind of information I could expect. I am peculiarly indebted to Mr Fergusson of Craigdarroch, though his name was not in my list, on the same account.

Without troubling the Society with a detail of the marches and countermarches which I was obliged to make, or minutely going over all the topics which have been already repeatedly treated, I shall briefly give the substance of the most material observations which occurred.

In the extensive tract through which I passed, the face of the country is much diversified. The surface is seldom plain or smooth. Even the lowest ground rises in knolls, and the points and fragments of basaltic rock, or blocks of granite, appear every where above the ground. Along the sides of the principal streams, the soil of the sloping banks is fertile, and the herbage close and sweet. Many copses, mixed with a variety of shrubbery, arise spontaneously in great vigour. The soil on the rising grounds is mostly dry, and much disposed to produce fern. In the hollows, lakes abound: And, in short, the scenery is highly picturesque. In the more inland parts, towards the heads of the rivers, the country becomes very rugged, rising into mountainous ridges, such as Kell's-range, the heights of Monigaß, &c. On some of these heights, the surface is covered with globular stones of different sizes, mixed with a layer of peat earth. The bottom being argillaceous, the ground is always wet, and the herbage long and coarse.

The industry of the inhabitants is conspicuous in the many stone walls raised for inclosing the land. Except in the wildest highest moors, the country is almost entirely surrounded and subdivided into inclosures of different dimensions. Even in the highest roughest parts of the country, properties and farms are frequently separated by a march wall; and it is surprising with what solidity and expedition these walls are now built. The nature of the country, indeed, is favourable, furnishing always the materials in abundance.

The chief object of industry among husbandmen here is the rearing of the valuable black cattle, for which this province has long been so famous. All the calves of both sexes are kept; and both males and females are castrated about the beginning of May, when they are a year old, except so many as are thought necessary for keeping up the breeding stock. Great attention is paid to the choice of the breeding bulls; and many of them are very handsome, and remarkably well formed for bearing a great deal of flesh. The cattle are almost all without horns; the shoulders are broad and square; the body is lengthy, and the back straight and broad; the legs are neither long nor thick, in proportion to the size of the animal; but it is a frequent fault that the pelvis is too narrow. With respect to the breeding of cattle, the same care is bestowed here as of sheep in the eastern side of the island; that the sexes of the nearer degrees of kindred do not meet in copulation; and almost the same reasons are given for it. The greatest part of the spare cattle are sold off at $2\frac{1}{4}$ years old, and of late have brought about 5 l. a-head.

To manage these numerous herds of cattle to advantage, and particularly to support them properly through the winter, occasions excessive labour to the inhabitants. All the little level spots capable of bearing hay are carefully saved, and every step taken to render them more productive. Even the benty herbage upon the hill sides, in all the cavities, where overflowing springs make it grow somewhat closer and ranker, is mown and made into hay; so that here, where the frequent rains renders the making of hay uncommonly

uncommonly laborious, a great part of the summer is occupied in laying up winter provision for the cattle.

But rural industry is not confined to the care of the herds. Besides feeding the inhabitants, a considerable quantity of corn and potatoes are annually exported. Along these coasts and river sides, wherever there is ground not incumbered with stones, the soil being naturally fertile when it is properly cultivated, produces plentiful crops, to which the excellent marle found in several places considerably contributes. The most common practice of husbandry is to lay lime or marl on grass ground, then to take three successive crops; the land is afterwards prepared for potatoes, and well manured with dung or compost, and the potatoes being planted in drills, are hoed and kept clean with the plough; barley, and grass seeds sown along with it, succeeds the potatoes; the grass is mown two years for hay, and afterwards pastured for 7 years. It is unfortunate, that the culture of turnips is not general in this part of the country. Quantities of this root sufficient to keep those fine thriving young cattle in condition during the winter, and carry on the natural progress of their growth without interruption; good houses for the accommodation of the farmers; and convenient sheds, in which the cattle could be fed and sheltered, either from the winter's storm, or summer's heat, with the fern, which abounds almost every where, collected to litter them, and increase the quantity of dung, where other manure is distant, would greatly tend to promote the prosperity of this province. It is suffering much at present from the effect of that speculating spirit, which of late has been so prevalent every where. The ample credit given by the agents of the bankers, spread through the country, has tempted many to extend their speculations too far; and the general failure of the commerce of the country having diminished the sale and price of cattle, they have been deprived of the resources by which they proposed to answer the demands upon them, and frequent bankruptcies, in which numbers are involved, occur.

Less attention is paid to the sheep than to the black cattle. The former are, for the most part, pastured on the highest and most rugged grounds, and are allowed to thieve for themselves in all seasons, except those which go on some high inland places where snow lies, which, in great falls, must be brought to lower ground. In the wild moors, some of the flocks are large, amounting to 4000, all of which pasture promiscuously: In the lower grounds they are less numerous, seldom exceeding 300. Along the sea side, between the mouths of the Dee and the Nith, is a ridge of high rocky land, mostly dry, and bearing a mixture of short heath and sweet herbage. Here many small flocks of sheep, resembling the shire-sheep described in the last section, formerly pastured. Some of the farmers still preserve the old kind, and the wool sold last year, unsalved, at 14 s. to 15 s. per stone; but, for the most part, a mongrel breed, made up of mixtures with degenerate mug sheep, and the rough wool sheep of the inland moors have succeeded. The sheep on the moors of Monigall and Carleferne are large boned and strong bodied; but generally rather too long legged. They have frequently,
around

around their necks, a ruff of wool equally coarse with that on the buttocks; the whole fleece is of a coarse quality, and much intermixed with black hairs. The price of shearing 1792, was from 5 s. to 7 s. per stone. This year the demand for coarse wool was greater than for that of a better quality, the price was about 1 s. per stone lower. On the lower eminences, the grafs is cloffer and of a finer quality than in the more inland and elevated parts of the country, and is also much shorter. The sheep are of a smaller size, and are generally of the kind formerly mentioned under the name of *fad woolled* sheep. Their fleeces are considerably finer; the wool of shearing 1792, sold from 11 s. to 12 s. per stone unsalved. The stone is different in different parts of this country. In some parts of the stewartry it is 28 lib. avoirdupoise; in others 26 lib.; and to the east of the river Orr 24 lib.

It is generally allowed, that wool of a good quality is less frequent in this province than formerly. In order to comply with the prevailing taste of the buyers of sheep, most of the farmers have been induced to bring rams from the heights of Nithsdale to copulate with the ewes, by which the quality of the fleece has been injured.

It is the opinion of some of the most accurate observers here, that if the natural course be not counteracted by crossing, the quality of the fleece will have an affinity to the pasture on which sheep feed. On the high moist grounds where the herbage is long, coarse, and thin, the wool, say they, is also so. On the contrary, where the ground is dry, and the herbage close, short, and fine, the sheep which feed upon it have a fine thick short fleece.

Though the practice of sinearing sheep with tar is not of a long standing here, it is now pretty general; but, of late, it has been thought proper to apply it more sparingly than it had been some years before. Some are of opinion that it has no immediate effect upon the growth of wool; but that by destroying vermin, which abounds most on sheep whose pasture is of the least nourishing quality, it prevents the waste of the animal juices, which these vermin consume; and, consequently, the wool is not deprived of its proper nourishment. For this reason, all sheep of the first year, which are most subject to be affected with vermin, are salved, and on high grounds, where the pasture is less nourishing, the whole flock.

The sheep in this country have suffered much from the frequent rains for three years past. The rot has been uncommonly frequent on the high moist grounds; and so great was the debility of the ewes, that in some places half the lambs died in the spring last year.

Mr Dalziel is now erecting a woollen manufacture at Kirkcudbright, which seems, in many respects, to be a proper place for the purpose. Should it and others in this district succeed, by creating a market for wool, and offering a distinguishing price adequate to the quality, they will have a very great effect in improving this material along those shores so favourable to its growth. Dr Lamont minister of Kirkpatrick-Durham, a gentleman who shows an active zeal for the prosperity of the country, carries on the

spinning, both of cotton and wool, in the village of his parish, and employs a good many young people in these manufactures. Unfortunately he labours under considerable disadvantages from the want of water to drive the machinery, and the want of skill and dexterity of his people in sorting and managing the wool; both of which, it is to be hoped, he soon will be able to surmount. There is also a little wool spinning in Dumfries: A greater work of that kind is now in contemplation, upon a water-fall a little below that town.

SECTION XI.

I SHALL not trouble the Society with any observations on the lower parts of Dumfriesshire: For though, in obedience to the directions given me, I called at several places in that district, nothing relative to the principal object of my mission occurring, I made my stay very short. No part of my rout, therefore, remains undescribed, but the sheep pastures which lie between the head of the Ken and the head of the Clyde. On the 23d I left Drumlanrig, and going up the Nith, made a circuit round Sanquhar, and from thence to Wanlockhead, Leadhills, and Crawfordmoor, and arrived at Hamilton on the evening of the 27th.

The banks of the Nith, below Sanquhar, are bold, and the ground rises quickly into hill pasture. Sometimes the red rotten rock, and sometimes gravel, occurs. The surface is dry, and the pasture short and sweet. There is a good deal of hill pasture between Moniehive and Tineran, of the same quality, which, from the many natural shelters, and the opportunities of providing winter food, seem to be remarkably well adapted for little flocks of fine woolled sheep. Around Sanquhar, the moors become moist and rugged, and the pasture coarse. About the head of the Ken, the most of the pastures are much of this description; and indeed I found them so at the sources of all the rivers I traced. Between Sanquhar and Wanlockhead there are some dry spots, bearing sweet verdure; but most of the land is mossy and wet, producing bent, deer-hair, drawling, blowing grass, &c. The hills about Wanlockhead and Leadhills are mostly dry, and very barren. The greatest part of Crawfordmoor is dry ground, and good pasture, considering the great height of the country. Towards the feet of the hills, the pasture is sometimes very rich. Among these mountains there is one incon-
 veniency attending the shepherd life, not known in the other pastures I had visited. The streams, impregnated with the washings of the lead ore, deposit it on the grass by their sides, when they are swollen with rains. The sheep, and especially the young lambs, have a great hankering after this flooded grass, and take every opportunity of running to the places where it grows. Whenever they get at it, death is the consequence; but it is remarkable, that however deleterious this is to other sheep, and even to black cattle, grown rams feed on it with safety.

This

This track is the very home of the black faced coarse woolled sheep. Their owners consider them as inferior to none in point of health and hardiness, and on that account they meet with a sure sale in the English markets. Nothing occurs, either in the description of the sheep, or the manner of managing, different from what has been already mentioned ; except that I heard here of a preventative for the braxy, which deserves to be tried. This is the boughs of the Scotch pine strewed on the pasture, that the hogs may nibble at them at pleasure. But if more descriptions are desired, I send along with this answers to the Society's queries, by Mr Johnston, Provost of Sauguhar, a long experienced storemaster, and very intelligent in the profession.

APPENDIX

A P P E N D I X.

L E T T E R

FROM

PROVOST JOHNSTONE.

I. THE kind of sheep kept is the black faced Scotch sheep. As to their origin it is difficult to say; they have been in this country time immemorial. Few of them have been mixed with other kinds. Many of the farmers have been in use to buy in rams from different places (though still of the same kind) for improving the breed; and it is generally agreed, that doing so has had good effects, in consequence of which it has become the general practice. They are hardy, fit to bear the extremes of hunger and cold to a great degree, answerable for the Fells of Yorkshire, and therefore purchased by the graziers there for stocking in that country. Originally they were short woolled, ill furnished in the fore quarters, and small sized; which defects the farmers have endeavoured to remove by changing rams, as has been already mentioned, and have succeeded considerably. The best kinds will not exceed 12 lbs. English per quarter, with about 6 lbs. tallow, from the feeding they meet with where bred; when carried into superior pasture, wedders of four or five years old will rise to 15 or 16 lb. per quarter. Their mutton is delicious, and in perfection at the above ages; the farmers, however, who keep wedders, of whom there are but few, sell them off at three years old.

II. The time of lambing begins about the 19th or 20th of April. If the weather proves mild, few die at the birth; if severe, the case is different. I must add here, that if the ewes are in good condition, the lambs will live in severe weather; but if in a reduced state, the loss of lambs is often great in moderate weather. Many of the farmers

farmers here experienced the truth of this observation last season ; for, though the weather was favourable during lambing time, the loss was generally great.

III. The wool in general is white ; the quality of it differs, being coarser or finer, conform to the difference of pasture the sheep are fed upon. The weight of a sheep's fleece, of one year old, betwixt four and five pounds English, and when six or seven years old, three lib. The finest of the wool grows upon the fore, and the coarsest upon the hindermost quarters of the sheep ; the proportion of each, or the length of the pile, I cannot exactly ascertain. It may be said to sell from 4 s. 6 d. per stone to 5 s. 6 d. The general part used to be sold into Kilmarnock, and other manufacturing towns in the west country ; of late much of it has gone into Yorkshire, where it is manufactured into carpets, broad cloth, &c. Some feeble attempts are making at Crawick mill, about a mile from Sanquhar, a place well adapted, in many respects, to an establishment of that kind, being in the centre of an wool country, abounding in coal, never failing streams of water, with excellent falls for working machinery, good roads, provisions plenty, and land carriage upon easy terms ; with these advantages, if men skilled in the business, and with funds adequate to such an undertaking, were to engage in it, they scarcely could fail of success ; but I am sorry to add, that this has not been the case hitherto. Pardon this digression.

IV. The best kinds of yield ewes sell at the rate of 9 s. 6 d. and 10 s. a-head ; three year old wethers at 12 s. ; stock ewes at 8 s. Edinburgh is the principal market for the first, and also the others, when there is not a demand from England.

V. Washing sheep before shearing is a mode of management beginning to be adopted here. A pen or fold is built close to the brink of a pool, twenty or twenty-five feet broad, four or five feet deep where the sheep make their leap into it, and gradually shallower towards the opposite side. The pen is wide at the entrance, for the purpose of admitting the sheep readily, and drawn narrower towards the place from whence they make the leap, which they always do from an eminence about three feet high, not more than one at a time, or two at most. By making the leap they are totally immersed in the water, and, after recovering the surface, are forced out at the opposite side of the pool. This operation is repeated three times, after which they are taken to such ground as gives the fairest chance for keeping the wool clean, and if the weather proves favourable, will be fit for shearing the third day after. Shearing begins about the latter end of June, and ends about the middle of July ; but varied according to circumstances, viz. the condition of the sheep, and the state of the weather. The wool, when shorn, is put into a barn, or other office-house, with dry peats put under it set upon one end.

VI. 25½ lib. English to the stone is the weight wool is usually sold at. When rams are changed, storemasters pay regard to the quality of their wool, on purpose to improve it ; but it must be owned, that this is always a secondary consideration amongst them, who generally attend chiefly to the improvement of the shape and size of their

sheep in preference to other circumstances ; and, if rams are properly chosen, the success is almost, I may say altogether, certain. If the breed is crossed, the progeny will always resemble the male side almost in all respects, so that the storemasters, by such means, may introduce any kind of sheep they please ; but people of skill never encourage a breed superior to the soil of their respective possessions, as this would be attended with loss instead of profit.

VII. The best range of pasture for carrying on a flock of sheep through the year, must be where there is easy access to different kinds of feeding, and good shelter ; good shelter particularly will make up for a great many other defects.

VIII. The quantity of ground necessary to feed a sheep must be very different according to the good or bad quality of it ; through this country, upon an average, an acre is not sufficient ; in like manner, half a crown a-head may as easily be made from some kinds of sheep, as 1 s. 6 d. from those of an inferior kind.

IX. About Whitfunday the yeld sheep, that is to say, the gimmers that want lambs, and the hogs, are separated from the ewes that have lambs, and the yeld ewes for sale, and are sent to the highest and bleakest part of the farm, that so the two last may have the better chance of advancing as rapidly as possible ; and, if the farm will admit, the ewes and lambs, and sale sheep, which are kept in one hirsle, are shifted to fresh pasture every fortnight. In two or three days after the lambs are spaned, they are carried to clear ground and good pasture, saved on purpose, where they remain two weeks ; after this removed to heath, which is also saved ; and after continuing there betwixt two and three weeks, are carried every two weeks to fresh pasture till they are smeared, when they are taken on to their winter walk, which is commonly saved from the latter end of the second week of August till after said operation takes place, where they remain till the middle of April, or thereby. For their security through winter, such portions of their walk as are least liable to be shut up with snow, are saved carefully during mild weather, that so the ground may be in as good order as circumstances will admit in the stormy or tempestuous part of the season. Measures of the same kind are also taken for the preservation of the old sheep. In lambing time, the herds take particular care to carry the ewes to the best shelter that can be got, and especially at night ; endeavour to see them early every morning, that they may know what of them have lambs ; and if any of the lambs are dead, make it their business when there are any twins, which is often the case, to set one of such twins to the ewe that has the dead lamb, which suits two purposes, as it relieves the ewe that has two, and gives both lambs a better chance for thriving ; such, and many other things too tedious to mention, is the charge of a herd during said season of the year.

X. The diseases most prevalent here are the sickness and sturdy, or water in the head, amongst hogs ; amongst old sheep the cling and trembling. It cannot be said that an effectual remedy has been discovered for any of them ; with regard to the cling, sickness, and trembling, change of pasture has to me appeared to be attended
with

with better effects than any thing else that I have heard of or tried. The sturdy has been sometimes cured by opening the skull, and taking out the blob or bag in which the water is contained, after which the wound is wrapped up very close to prevent the access of air; but often such attempts are fruitless. When the pasture of sheep infected with the cling is changed, they should be taken to clean heath; soft rich grass should be avoided; in consequence of such treatment as is here recommended, I had about forty that recovered in one season, having separated them from the sound or healthy part of the stock, from time to time, as soon as they seemed to have caught the infection, and kept apart upon such ground as above described.

XI. The sheep are smeared. Two pounds butter, melted over a slow fire, is commonly put into one Scotch pint of tar, with which, upon an average, four hogs are smeared, and about seven old sheep; it is used on purpose to destroy vermin, with which young sheep are infested, and to prevent scab upon old sheep; if omitted, the wool degenerates very much in quality, and the sheep generally lose a great part of it, by which they are so much exposed to the inclemency of the weather that their lives are endangered; but this is to be understood to happen to such only as are kept upon high stormy land; when fed in rich low pasture, and well sheltered, where they continue in good habit through the whole year, smearing is not necessary, especially amongst old sheep.

